ORAL ARGUMENT NOT YET SCHEDULED

No. 24-1120 (and consolidated cases)

IN THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF WEST VIRGINIA, *et al.*,

Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY, *et al.*,

Respondents.

On Petitions for Review of Final Agency Action of the United States Environmental Protection Agency 89 Fed. Reg. 39,798 (May 9, 2024)

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), Petitioners state as follows:

A. Parties, Intervenors, and *Amici Curiae*

These cases involve the following parties, intervenors, and *amici curiae*:

Petitioners

24-1120: State of West Virginia, State of Indiana, State of Alabama, State of Alaska, State of Arkansas, State of Florida, State of Georgia, State of Idaho, State of Iowa, Commonwealth of Kentucky, State of Louisiana, State of Mississippi, State of Missouri, State of Montana, State of Nebraska, State of New Hampshire, State of North Dakota, State of Oklahoma, State of South Carolina, State of South Dakota, State of Tennessee, State of Texas, State of Utah, Commonwealth of Virginia, and State of Wyoming

24-1121: State of Ohio and State of Kansas

24-1122: National Rural Electric Cooperative Association

24-1124: National Mining Association and America's Power

24-1126: Oklahoma Gas and Electric Company

24-1128: Electric Generators for a Sensible Transition

24-1142: United Mine Workers of America, AFL-CIO

24-1143: International Brotherhood of Electrical Workers, AFL-CIO

24-1144: International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, AFL-CIO

24-1146: Midwest Ozone Group

24-1152: Edison Electric Institute

24-1153: NACCO Natural Resources Corporation

24-1155: Idaho Power Company

24-1222: Appalachian Region Independent Power Producers Association

24-1226: Rainbow Energy Center, LLC

24-1227: Montana-Dakota Utilities Co.

24-1233: Westmoreland Mining Holdings LLC, Westmoreland Mining LLC, and Westmoreland Rosebud Mining LLC

Respondents

Respondents are the United States Environmental Protection Agency (in Nos. 24-1120, 24-1121, 24-1122, 24-1124, 24-1126, 24-1128, 24-1142, 24-1143, 24-1144, 24-1146, 24-1152, 24-1153, 24-1155, 24-1222,

24-1226, 24-1227, and 24-1233) and Michael S. Regan, Administrator, United States Environmental Protection Agency (in Nos. 24-1120, 24-1121, 24-1122, 24-1124, 24-1126, 24-1146, 24-1153, 24-1155, 24-1222, 24-1226, 24-1227, and 24-1233).

Intervenors and *Amici Curiae*

The Louisiana Public Service Commission and the Tennessee Valley Public Power Association, Inc. are Petitioner-Intervenors.

The American Lung Association, American Public Health Association, California Air Resources Board, City and County of Denver, City of Boulder, City of Chicago, City of New York, Clean Air Council, Clean Wisconsin, Commonwealth of Massachusetts, Commonwealth of Pennsylvania, Consolidated Edison, Inc., District of Columbia, Edison Electric Institute, Natural Resources Defense Council, New York Power Authority, Pacific Gas and Electric Company, Power Companies Climate Coalition, Sacramento Municipal Utility District, State of Arizona, State of Colorado, State of Connecticut, State of Delaware, State of Hawaii, State of Illinois, State of Maine, State of Maryland, State of Michigan, State of Minnesota, State of New Jersey, State of New Mexico, State of New York, State of North Carolina, State of Oregon, State of Rhode

Island, State of Vermont, State of Washington, and State of Wisconsin are Respondent-Intervenors.

The Chamber of Commerce of the United States of America is an *amicus curiae* in support of Petitioners.

Sierra Club, Environmental Defense Fund, and Professor Rothschild are *amici curiae* in support of Respondents.

B. Ruling Under Review

These consolidated cases involve final agency action of the United States Environmental Protection Agency entitled: "New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule," and published on May 9, 2024, at 89 Fed. Reg. 39,798.

C. Related Cases

These consolidated cases have not previously been before this Court or any other court.

CORPORATE DISCLOSURE STATEMENTS

Non-governmental Petitioners submit the following statements under Rule 26.1 of the Federal Rules of Appellate Procedure and Circuit Rule 26.1:

America's Power is a nonprofit membership corporation, and its members are companies involved in the production of electricity from coal. As the only national trade association whose sole mission is to advocate at the federal and state levels on behalf of coal-fueled electricity and the coal fleet, America's Power recognizes the inextricable link between energy, the economy, and our environment. America's Power supports policies that promote the wise use of coal, one of America's largest domestically produced energy resources. America's Power is a "trade association" within the meaning of Circuit Rule 26.1(b). It has no parent corporation, and no publicly held company has 10% or greater ownership interest in America's Power.

Appalachian Region Independent Power Producers Association ("ARIPPA") is a non-profit trade association that represents a membership primarily comprised of electric generating plants using environmentally friendly circulating fluidized bed boiler technology to convert coal refuse and/or alternative fuels such as biomass into alternative energy and/or steam, with the resultant alkaline ash used to reclaim mine lands. ARIPPA was organized for the purpose of promoting the general interests of its member facilities. ARIPPA has no parent companies, subsidiaries, or affiliates that have issued shares or debt securities to the public, although specific individuals in the membership of ARIPPA have done so. ARIPPA has no outstanding shares or debt securities in the hands of the public and has no parent company. No publicly held company has a 10% or greater ownership interest in ARIPPA.

Edison Electric Institute ("EEI") is a national association of investor-owned electric utility companies and operates on a consensus basis with regards to public policy issues, which may not reflect unanimity amongst all member companies. It has no parent companies, subsidiaries or

affiliates. EEI has no outstanding shares or debt securities in the hands of the public, and no publicly owned company has a 10% or greater ownership interest in EEI.

Electric Generators for a Sensible Transition is an *ad hoc* coalition of electric generating companies and a national trade association that have joined together for the purpose of challenging the final rule of the United States Environmental Protection Agency that is at issue in these consolidated cases. The members of the *ad hoc* coalition own and operate (or are the parent corporations of subsidiaries that own and operate) electric generating units that are subject to the final rule or have members that own and operate such units. The members of the *ad hoc* coalition are: Ameren Missouri; American Electric Power Company, Inc.; American Public Power Association; Appalachian Power Company; Arizona Public Service Company; Duke Energy Corporation; Evergy, Inc.; Kentucky Power Company; Kentucky Utilities Company; Louisville Gas and Electric Company; MidAmerican Energy Company; Monongahela Power Company; Nevada Power Company d/b/a NV Energy; NorthWestern Energy Group, Inc.; NRG Energy, Inc.; NRG Texas Power LLC; Ohio Valley Electric Corporation; PacifiCorp; Public Service Company of Oklahoma; Sierra Pacific Power Company d/b/a NV Energy; The Southern Company; Southwestern Electric Power Company; Talen Generation, LLC; Talen Montana Holdings, LLC; Vistra Corp.; and Wheeling Power Company. Electric Generators for a Sensible Transition has no parent corporation, and no publicly held corporation has a 10% or greater ownership in it.

Idaho Power Company is a wholly owned subsidiary of IDACORP, Inc., an Idaho corporation. The publicly traded corporation, IDACORP, Inc., owns 100% of the stock of Idaho Power Company.

International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers & Helpers, AFL-CIO ("IBB") is a non-profit national labor organization with headquarters in Kansas City, Kansas. IBB's members are active and retired members engaged in various skilled trades of welding and fabrication of boilers, ships, pipelines, and other industrial facilities and equipment in the United States and Canada, and workers in other industries in the United States organized by the IBB. The IBB provides collective bargaining representation and

other membership services on behalf of its members. As a professional association, the IBB is not required by FRAP Rule 26.1 or Circuit Rule 26.1 to provide a list of its members. The IBB is affiliated with the American Federation of Labor-Congress of Industrial Organizations. The IBB and its affiliated lodges own approximately 60 percent of the outstanding stock of Brotherhood Bancshares, Inc., the holding company of the Bank of Labor. Bank of Labor's mission is to serve the banking and other financial needs of the North American labor movement. No entity owns 10 percent or more of the IBB.

International Brotherhood of Electrical Workers, AFL-CIO ("IBEW") is a non-profit national labor organization with headquarters located at 900 7th Street, N.W., Washington, D.C. 20001. IBEW's members are active and retired skilled electricians and related professionals engaged in a broad array of U.S. industries, including the electrical utility, coal mining, and railroad transportation sectors that stand to be impacted adversely by implementation of the EPA's final agency action. IBEW provides collective bargaining representation and other membership services and benefits on behalf of its members. IBEW is affiliated with the American Federation of Labor-Congress of Industrial Organizations. IBEW has no parent companies, subsidiaries, or affiliates that have issued shares or debt securities to the public.

Midwest Ozone Group is a continuing association of organizations and individual entities operated to promote the general interests of its membership on matters related to air emissions and air quality. Midwest Ozone Group has no parent companies, subsidiaries, or affiliates that have issued shares or debt securities to the public, although specific individual members of Midwest Ozone Group have done so. Midwest Ozone Group has no outstanding shares or debt securities in the hand of the public and has no parent company. No publicly held company has a 10% or greater ownership interest in Midwest Ozone Group.

Montana-Dakota Utilities Co. is engaged in the distribution of natural gas and the generation, transmission, and distribution of electricity in the States of North Dakota, South Dakota, Montana, and Wyoming. Montana-Dakota Utilities Co. is a direct, wholly owned subsidiary of MDU Energy Capital, LLC. MDU Energy Capital, LLC, is a direct, wholly owned subsidiary of MDU Resources Group, Inc. No publicly held

company has a 10% or greater ownership interest in MDU Resources Group, Inc.

NACCO Natural Resources Corporation ("NACCO") is a wholly owned subsidiary of NACCO Industries, Inc. NACCO is not publicly held, but NACCO Industries, Inc., its parent, is a publicly traded corporation that owns more than 10% of the stock of NACCO. No other publicly held corporation owns more than 10% of the stock of NACCO. The general nature and purpose of NACCO, insofar as relevant to this litigation, is the mining and delivery of lignite coal as fuel for power generation; and the provision of mining services to natural resources companies.

National Mining Association ("NMA") is a nonprofit national trade association that represents the interests of the mining industry, including every major coal company operating in the United States. NMA has over 250 members, whose interests it represents before Congress, the administration, federal agencies, the courts, and the media. NMA is a "trade association" within the meaning of Circuit Rule 26.1(b). NMA is not a publicly held corporation and has no parent corporation. No publicly held company has 10% or greater ownership interest in NMA.

National Rural Electric Cooperative Association ("NRECA") is the national association for nearly 900 not-for-profit rural electric cooperatives and public power districts that provide electric service to roughly one in eight Americans, covering 56% of the Nation's landscape. Rural electric cooperatives serve millions of businesses, homes, schools, farms, irrigation systems, and other establishments in 2,500 of the nation's over 3,100 counties, including 92% of the Nation's persistent poverty counties. America's electric cooperatives are owned by the people they serve, and they comprise a unique sector of the electric industry. Electric cooperatives are focused on providing affordable, reliable, and safe electric power in an environmentally responsible manner. NRECA is not a publicly held corporation, and NRECA has no parent corporation. No publicly held company has 10% or greater ownership interest in NRECA.

Oklahoma Gas and Electric Company ("OG&E") is a corporation organized and existing under the laws of the state of Oklahoma, and has its principal office in Oklahoma City, Oklahoma. OG&E is a wholly

owned subsidiary of OGE Energy Corp., a holding company that is exempt from registration under the Public Utility Holding Company Act of 2005. The Vanguard Group and BlackRock Fund Advisors each has a 10% or greater ownership interest in OGE Energy Corp. No other publicly held company has a 10% or greater ownership interest in OGE Energy Corp. The common stock of OGE Energy Corp. is publicly traded and listed on the New York Stock Exchange. OGE Energy Corp. has no parent company.

Rainbow Energy Center, LLC ("Rainbow"), a North Dakota limited liability company, is a wholesale power generation company headquartered in Bismarck, North Dakota. Rainbow is a wholly owned subsidiary of REMC Assets, LP, a North Dakota limited partnership. REMC Group, LLC, a North Dakota limited liability company, holds the 1% general partner controlling interest in REMC Assets, LP. No publicly held corporation has a 10% or greater ownership interest in REMC Assets, LP or in REMC Group, LLC.

United Mine Workers of America ("UMWA") is a non-profit national labor organization with headquarters in Triangle, Virginia. UMWA's members are active and retired miners engaged in the extraction of coal and other minerals in the United States and Canada, and workers in other industries in the United States organized by the UMWA. UMWA provides collective bargaining representation and other membership services on behalf of its members. UMWA is affiliated with the American Federation of Labor-Congress of Industrial Organizations. UMWA has no parent companies, subsidiaries, or affiliates that have issued shares or debt securities to the public.

Westmoreland Mining Holdings LLC has no parent corporation and no publicly held corporations own 10% or more of its stock. The company has an extensive portfolio of coal mining operations in the United States and Canada.

Westmoreland Mining LLC has no parent corporation and no publicly held corporations own 10% or more of its stock. The company has an extensive portfolio of coal mining operations in the United States and Canada.

Westmoreland Rosebud Mining LLC has no parent corporation and no publicly held corporations own 10% or more of its stock. The company has an extensive portfolio of coal mining operations in the United States and Canada.

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Page(s)

Cases

Statutes

Other Authorities

GLOSSARY OF TERMS

Act	Clean Air Act
ARIPPA	Appalachian Region Independent Power Producers Association
BSER	Best System of Emission Reduction
CCS	Carbon Capture and Sequestration/Storage
CO_2	Carbon Dioxide
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
GW	Gigawatt
lb/CO_2/MWh	Pounds of CO_2 per Megawatt Hour
MW	Megawatt
RTC	Response to Comments

INTRODUCTION

EPA's authority to regulate greenhouse gases under the Clean Air Act ("Act") is not unlimited. But it has sometimes lost sight of that basic principle. And here, EPA once more exceeded the limits on its authority and acted arbitrarily and capriciously in issuing its rule governing greenhouse-gas emissions from certain fossil-fuel-fired power plants. *See* CI8244 (89 Fed. Reg. 39,798 (May 9, 2024) ("Rule")).[1]

Section 7411 of the Act directs EPA to establish "standards of performance" for new sources and guidelines to assist States in setting such standards for existing sources. These standards must reflect application of the "best system of emission reduction" ("BSER") that "*has been adequately demonstrated*," and they must be "*achievable*." 42 U.S.C. § 7411(a)(1), (b), (d) (emphases added). Yet EPA selected a "system"—carbon capture and sequestration/storage ("CCS") of 90% of a power plant's annual CO_2 emissions—that *no power plant anywhere* has

[1] The parties are using the deferred appendix option in this brief. *See* Circuit Rule 30(c). In Petitioners' preliminary brief, "CI" refers to documents identified in the Certified Index to the Administrative Record, ECF No. 2058471, and are identified by the last four digits assigned to each document in the index. In the final brief, "CI" citations are replaced with "JA" page numbers, which refer to the Joint Appendix.

successfully implemented. Nor has any power plant even come close to meeting the Rule's concomitant emissions limitation based on 90% CCS, confirming it is not "achievable." Beyond those fundamental issues, myriad other insurmountable barriers will prevent plants from implementing all three aspects of a CCS system—capture, transport, and storage—on the timeline the Rule requires.

EPA ignored the statutory commands to select a BSER that "*has been* adequately demonstrated" and an emission limitation that is presently "achievable." Instead, it indulged in predictions about what *will* be adequately demonstrated and achievable in the future. But as EPA once recognized, EPA does not have authority to base its requirements on what does not yet exist. *See, e.g.*, Tr. of Oral Arg., *West Virginia v. EPA*, No. 15-1363 (D.C. Cir. Sept. 27, 2016), ECF No. 1646159 ("OA Transcript") (EPA counsel conceding "any emission reduction system that isn't already in place and successful within an industry cannot be used" under Section 7411). EPA cannot effectively rewrite the statutory text to accommodate its change of heart.

Faced with a Rule based on an EPA-invented alternate reality, most regulated plants will simply close or operate drastically less. That

appears to be EPA's objective. The Rule gives plants two options: either (1) attempt to deploy the exorbitantly expensive, unproven 90% CCS system and hope it works, or (2) avoid the 90% CCS mandate by shutting down (for existing coal plants) or severely limiting operations (for new gas plants). That Hobson's choice makes generation-shifting the only viable option. And this kind of reorientation of our national energy system requires a clear congressional go-ahead. *See West Virginia v. EPA*, 597 U.S. 697 (2022). Yet Congress has not provided one.

The problems with the Rule do not end there. It renders illusory the States' statutorily delegated discretion to implement source-specific standards. It uses accounting gimmicks to get around the Act's mandate that EPA consider costs when formulating these regulatory requirements. It does not meaningfully meet EPA's statutory responsibility to consider energy needs but instead threatens to topple our Nation's energy grid at an especially vulnerable time. It relies on flawed modeling and botched math. It creates new "subcategories" of facilities based on *non*-performance—even though Section 7411 speaks of *performance*. And it ignores key comments on entire issues, such as coal refuse.

All in all, the Rule fails to respect the boundaries Congress set, is unsupported by the record, does not appreciate how the power sector underlies every aspect of modern life, and does not reflect a genuine effort to allow plants to *perform* while limiting their emissions. Instead, the Rule is a wolf in sheep's clothing, pretending to be a run-of-the-mill technology-based rule when in fact it controls emissions by remaking the power sector in its desired image. The Court should not sign off on such a transgression. It should vacate the Rule.

JURISDICTIONAL STATEMENT

Petitioners filed timely petitions for review of the Rule in this Court under § 7607(b)(1). This Court has jurisdiction under that provision and 5 U.S.C. §§ 702-706.

STATEMENT OF THE ISSUES

1. Whether EPA acted arbitrarily, capriciously, or exceeded its Section 7411 authority by promulgating standards that: (a) identify 90% CCS as the BSER for certain sources even though that technology has not been adequately demonstrated; (b) establish unachievable emission limitations based on that BSER; (c) impose exorbitantly costly requirements; (d) threaten the Nation's electrical grid and unduly raise consumer prices; and (e) rely on flawed modeling.

2. Whether EPA acted arbitrarily, capriciously, or exceeded its Section 7411 authority by selecting 40% gas co-firing as the BSER for one subcategory of existing coal plants when that system imposes unlawful generation-shifting and the emission limitations based on that BSER are neither achievable nor cost-effective.

3. Whether the major questions doctrine mandates the conclusion that EPA exceeded its authority because it interpreted the phrase "has been adequately demonstrated" to include systems that have never been implemented anywhere and promulgated unachievable standards, thus imposing unlawful generation-shifting under another guise without clear authorization from Congress.

4. Whether EPA unlawfully constrained States' discretion by creating rigid presumptive emission standards and placing onerous new limits on the States' ability to consider remaining useful life and other factors.

5. Whether EPA acted arbitrarily, capriciously, or exceeded its Section 7411 authority by "subcategorizing" source categories or adopting "exemptions" requiring facilities to retire, even though EPA may set guidelines only for "standards of performance," not nonperformance.

6. Whether EPA acted arbitrarily, capriciously, or exceeded its Section 7411 authority by regulating existing coal-fired plants under Section 7411(d) when it already regulates them under Section 7412.

7. Whether EPA acted arbitrarily, capriciously, or exceeded its authority by ignoring and failing to respond to comments, including comments concerning coal refuse facilities.

STATUTES AND REGULATIONS

The Rule is codified in 40 C.F.R. Part 60, Subparts TTTT, TTTTa, and UUUUb, and in revisions to 40 C.F.R. § 60.17. Pertinent statutes and regulations are reproduced in the addendum.

STATEMENT OF THE CASE

I. Standards of Performance Under the Clean Air Act

Enacted in 1970, Section 7411 authorizes the regulation of certain air pollutants emitted by stationary sources. It directs EPA to "list" categories of "stationary sources"—defined as "any building, structure, facility, or installation which emits or may emit any air pollutant," § 7411(a)(3)—whose pollutants endanger public health or welfare, § 7411(b)(1). EPA must establish nationally applicable "standards of performance" for *new* sources within that category. § 7411(b)(1)(B). EPA also may, in limited circumstances, call upon States to submit plans

containing State-established standards of performance for the same pollutant from *existing* sources within the same category. § 7411(d)(1).

A. The Definition of "Standard of Performance"

Section 7411(a)(1) defines a "standard of performance" to mean:

> a standard of emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction, which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

The term "emission limitation" means a "requirement . . . which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis . . . ." § 7602(k). A "standard of performance" must reflect the emission limitation that can be achieved by "the application of the best system of emission reduction" that "has been adequately demonstrated" to limit emissions from an individual source on a continuous basis, after considering cost and other factors, including energy requirements. § 7411(a)(1). These standards involve technological controls or low-polluting production processes that: (i) are capable of being implemented at the source, (ii) limit the source's emissions while it

operates, and (iii) do not limit the source's level of production. *See generally* 40 C.F.R. Part 60, Subparts Cb-QQQQ.

B. Standards of Performance for Existing Sources

Though Section 7411's primary focus—as reflected in its title—is the regulation of "new" sources, "the statute also authorizes regulation of certain pollutants from *existing* sources." *West Virginia*, 597 U.S. at 709-10 (emphasis in original). But EPA may set standards for pollutants emitted by existing sources only if it has set new source standards for those pollutants and only if they are not already regulated under two other Clean Air Act programs. *See id.* at 710. EPA's authority to regulate existing sources is a "gap filler" authority. *Id.* at 724. That is why EPA has set performance standards for existing sources "only a handful of times." *Id.* at 710.

While Section 7411(b) authorizes *EPA* to set the standards for new sources, Section 7411(d) authorizes *the States* to set those standards for existing sources; EPA may only "prescribe regulations . . . establish[ing] a procedure . . . under which each State shall submit to [EPA] a plan which . . . establishes standards of performance for any existing source." Section 7411(d)(1) further directs that EPA's regulations "shall permit

the State in applying a standard of performance to any particular source . . . to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies." EPA only has the authority to "prescribe a plan for a State in cases where the State fails to submit a satisfactory plan." § 7411(d)(2)(A).

II. EPA's Past Section 7411 Rules Addressing CO_2 Emissions from Power Plants

A. 2015 Performance Standards for New Power Plants

EPA first invoked Section 7411(b) to regulate CO_2 emissions from new power plants (including modified and reconstructed ones, *see* § 7411(a)(2)) in 2015, promulgating performance standards for both steam generating units and combustion turbines. 80 Fed. Reg. 64,510 (Oct. 23, 2015). Steam generating units produce electricity by burning fuel—usually coal, but sometimes natural gas or oil—to create steam that drives a generator. CI8244 (89 Fed. Reg. at 39,840). Combustion turbines combust fuel to create electricity without steam, operating similarly to jet engines. The vast majority of combustion turbines are fired with

natural gas, although they can also combust distillate oil and other fossil fuels.[2] CI8244 (*Id.* at 39,818).

In the 2015 rule, EPA determined that the BSER for newly constructed coal-fired facilities was a "highly efficient new supercritical pulverized coal . . . utility boiler . . . implementing partial CCS to the degree necessary to achieve an emission of" 1,400 pounds of CO_2 per megawatt hour ("lb CO_2/MWh"). 80 Fed. Reg. at 64,513. For facilities combusting bituminous coal, this standard required the capture and storage of approximately 16% of a facility's CO_2, and for facilities burning subbituminous coal or dried lignite, the capture and storage rate was approximately 23%. *Id.* For modified and reconstructed coal-fired facilities, EPA rejected CCS technology and concluded that the BSER was improved operational efficiency. Applying this system, EPA established standards for modified coal-fired facilities of no less than 1,800 to 2,000 lb CO_2/MWh, to be determined on a case-by-case basis. *Id.* For new and reconstructed gas-fired facilities, the standard was 1,000 lb

[2] For simplicity, Petitioners refer to combustion turbines as gas-fired facilities in this brief, but the arguments apply equally to the small handful of combustion turbines that combust other fossil fuels.

CO_2/MWh, based on a BSER of natural gas combined cycle technology. *Id.*

Petitions for review challenging the 2015 performance standards for new coal-fired facilities are in abeyance before this Court. *See North Dakota v. EPA*, No. 15-1381 (and consolidated cases) (D.C. Cir.). No party challenged the performance standards for new gas-fired facilities.

B. The Clean Power Plan

The same day that EPA issued the CO_2 performance standards for new sources, it separately issued under Section 7411(d) a rule—known as the "Clean Power Plan"—to address CO_2 emissions from existing gas and coal facilities. 80 Fed. Reg. 64,662 (Oct. 23, 2015). In the Clean Power Plan, EPA concluded that emission controls implementable at individual existing coal plants would "yield only a small amount of emission reductions." *Id.* at 64,769. Thus, because EPA believed "much larger emission reductions [were] needed . . . to address climate change," *id.* at 64,727, EPA abandoned the technology-based approach used in every other performance standard rulemaking and decided instead to require "generation shifting from higher-emitting to lower-emitting" sources for electricity production. *Id.* at 64,728. This generation-shifting took two

forms. The first was a shift in electricity production from coal plants to lower-emitting gas plants. *Id.* The second was a shift from both coal and gas electric generation to renewable (wind and solar) generation. *Id.* at 64729, 64748.

The Clean Power Plan never went into effect. Various petitioners immediately challenged the rule, *see West Virginia v. EPA*, No. 15-1363 (and consolidated cases) (D.C. Cir.), and after this Court denied stay motions, ECF No. 1594951, the Supreme Court granted a stay, Order, *West Virginia v. EPA*, No. 15A773 (S. Ct. Feb. 9, 2016).

C. The Affordable Clean Energy Rule

The Clean Power Plan was repealed and replaced in 2019 by the Affordable Clean Energy Rule. 84 Fed. Reg. 32,520 (July 8, 2019). There, EPA concluded that Section 7411 unambiguously foreclosed the sort of generation-shifting seen in the Clean Power Plan. *Id.* at 32,523. EPA instead determined that the BSER for existing coal plants was a combination of equipment upgrades and operating practices that would improve a facility's heat rate. *Id.* at 32,522, 32,537.

On petitions for review, this Court held that the Affordable Clean Energy Rule "hinged on a fundamental misconstruction of Section

7411(d)" that did not encompass generation-shifting and remanded it. *Am. Lung Ass'n v. EPA*, 985 F.3d 914, 930 (D.C. Cir. 2021) (per curiam), *rev'd West Virginia*, 597 U.S. 697 (2022).

D. *West Virginia v. EPA*

The Supreme Court reversed that decision in *West Virginia*, concluding that Congress did not empower EPA to "restructur[e] the Nation's overall mix of electricity generation" by "dictating the optimal mix of energy sources nationwide." 597 U.S. at 730. EPA's interpretation "'discover[ed] in a long-extant statute an unheralded power' representing a 'transformative expansion in [EPA's] regulatory authority,'" based on an ancillary provision of the statute that "was designed to function as a gap filler and had rarely been used in preceding decades." *Id.* at 724 (quoting *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 324 (2014)). That newly discovered authority, the Court held, would impermissibly allow EPA to decide "that it would be 'best' if coal made up a much smaller share of national electricity generation" or even "forc[e] coal plants to … cease making power altogether." *Id.* at 728.

As the Court explained, nothing in the Act clearly affords EPA that "unprecedented power over American industry." *Id.* (quoting *Indus.*

Union Dep't v. Am. Petroleum Inst., 448 U.S. 607, 645 (1980) (plurality op.)). On the contrary, there was "little reason to think" that Congress "tasked [EPA], and [EPA] alone, with balancing the many vital considerations of national policy implicated in deciding how Americans will get their energy"—particularly when the agency has "'no comparative expertise'" in making those policy judgments. *Id.* at 729 (quoting *Kisor v. Wilkie*, 588 U.S. 558, 578 (2019)).

The Court was particularly skeptical of the notion that EPA possessed the authority to "forc[e] coal plants to 'shift' away virtually all their generation," *id.* at 728, or "requir[e] coal plants to become natural-gas plants," *id.* at 728 n.3. In short, the authority that Congress granted EPA to "reduce air pollution from power plants" does not also empower it to "dictat[e] the optimal mix of energy sources nationwide." *Id.* at 730.

III. The 2024 Rule

EPA issued the Rule—its third try—on May 9, 2024. The Rule promulgates EPA's BSER determinations and performance standards for new and reconstructed gas facilities and modified coal facilities under Section 7411(b). CI8244 (89 Fed. Reg. at 39,902-52 (gas), 39,953-55 (coal)). The Rule also promulgates EPA's BSER determination and

emission guidelines for existing coal facilities under Section 7411(d). CI8244 (*Id.* at 39,840-902). Finally, the Rule repeals the Affordable Clean Energy Rule. CI8244 (*Id.* at 39,836-40).

At issue here are the performance standards set by EPA under Section 7411(b) for new gas facilities, *see* CI8244 (*Id.* at 39,902), and EPA's guidelines for State standards under Section 7411(d) for existing coal-fired units, *see* CI8244 (*Id.* at 39,840).

For new gas facilities that generate electricity at a level more than 40% of their potential electric output (so-called "base load units"), EPA determined that the BSER is 90% CCS. CI8244 (89 Fed. Reg. at 39,903). Based on that determination, EPA imposed an emission standard of 100 lb CO_2/MWh, with a compliance deadline of January 1, 2032 (the beginning of Phase 2).[3] *See id.* That system requires the installation of specially designed CO_2 capture technology, as well as transportation (normally by pipeline) of the captured CO_2 to a site where it can be

[3] Phase 1, in effect now, requires any new such facility to meet an emission standard of between 800-900 lb CO_2/MWh. This standard is based on a BSER of highly efficient combined cycle generation. CI8244 (89 Fed. Reg. at 39,947-48).

permanently stored (normally by sequestering it deep underground). *See* CI8244 (*Id.* at 39,846).

For "intermediate load" units, which generate only 20% to 40% of their potential electric output, EPA set a standard based on a BSER of "high-efficiency simple cycle turbine technology." CI8244 (*Id.* at 39,918). For "low load" units, which generate less than 20% of their potential electric output, the standard is based on a BSER of "lower-emitting fuels." CI8244 (*Id.* at 39,917). Thus, new gas units that are unable to install 90% CCS or any of its components must artificially limit their generating capacity to meet the eligibility criteria for either the "intermediate load" or "low load" subcategories.

As to existing coal facilities, EPA again relied on 90% CCS as the BSER, this time for any "long-term" plants that "intend to operate past January 1, 2039," with compliance required by January 1, 2032. CI8244 (*Id.* at 39,801, 39,838). But the Rule exempts from the 90% CCS mandate coal plants that commit to retire. CI8244 (*Id.* at 39,801).

Plants that commit to permanently cease operation before 2039 but intend to operate past January 1, 2032—called "medium-term" plants—must meet a presumptive standard that reflects a 16% reduction in the

plants' CO_2 emissions by January 1, 2030. CI8244 (*Id.* at 39,801). This presumptive standard is based on EPA's selection of "natural gas co-firing" at 40% of annual heat input as the BSER. CI8244 (*Id.* at 39,841). This BSER involves turning a coal-fired unit into one that directly shifts 40% of its generation from coal to natural gas.

Any coal plant that promises to "permanently cease operation" before 2032, CI8244 (*Id.* at 39,843), must commit to this option in a federally enforceable State plan, and is exempt from the Rule, *see* 40 C.F.R. §§ 60.5785b, 60.5740b(a)(9)(ii).

SUMMARY OF ARGUMENT

I. EPA has acted unlawfully in identifying 90% CCS as the BSER. That system has not been adequately demonstrated and the emission limitations based on it (100 lb CO_2/MWh) are not achievable. No facility has ever demonstrated continuous 90% capture of all its CO_2 emissions as the Rule requires. And power plants face serious obstacles at all three stages (capture, transport, and storage) because of the massive infrastructure buildout the Rule mandates. EPA tries to overcome these problems by rewriting the Act's text, arrogating to itself

authority to impose systems that might *someday* be viable but are not today. That goes too far.

Section 7411 also requires EPA to consider cost when it identifies a BSER. The agency has previously recognized that CCS is prohibitively expensive. But it tries to fix that problem here by freeriding on billions of dollars of potential tax credits, claiming that because costs will be borne by the taxpayer, they are not costs at all. Hardly. Cost means cost—if EPA's CCS mandates will cost billions to *someone*, it needs to account for those crushing expenses before moving forward. It failed to do so.

Section 7411 additionally requires EPA to address energy requirements. Yet, as many regional transmission organizations and industry experts explained to EPA, the Rule will eliminate a huge amount of critical base load power. That sudden withdrawal of significant capacity will threaten energy reliability nationwide. EPA responded largely by noting that it met with some of the energy experts about these issues. But holding a few meetings is hardly the same as addressing a major problem.

In evaluating costs, energy, and other impacts, EPA also arbitrarily and capriciously relied on a flawed model. Commenters identified flaws

in that model during the comment period, but EPA ignored them. EPA's model is inconsistent with other available models including from the Department of Energy ("DOE"), overlooks important challenges facing the energy industry, and contains demonstrable quantitative errors.

II. EPA's one BSER alternative for existing coal facilities to avoid 90% CCS (other than retiring by 2032) fares no better. EPA's selection of 40% co-firing of gas as the BSER for coal units transforms a coal plant into a "hybrid" plant that must use natural gas for at least 40% of the fuel burned at the plant by 2030—in addition to committing to retire by 2039. This BSER involves modifications to the coal plant's boiler that may be extensive.

The 40% co-firing BSER exceeds EPA's statutory authority because it openly requires shifting generation from coal to gas, which is precisely what the Supreme Court held EPA could not do in *West Virginia*. In addition, the Rule's 40% co-firing BSER violates Section 7411(a)(1) for three separate reasons: First, the emission limit based on 40% co-firing is not *currently* achievable for all sources nationwide because the majority of coal plants do not have access to gas. Second, even if EPA can require the construction of massive pipeline infrastructure under Section

7411(a)(1), this emission limit based on 40% co-firing is nevertheless unachievable because (a) even those plants with access to gas may be unable to obtain a sufficient and consistent supply of gas to operate and (b) the necessary pipeline infrastructure cannot be permitted and constructed by 2030. Third, 40% co-firing is not cost-effective.

III. The major-questions doctrine further confirms that the Rule exceeds EPA's statutory authority. EPA is once more resolving questions of vast political and economic significance without a clear statement from Congress allowing it to do so. It is taking these actions without any special expertise in energy regulation. And it is flexing a newly transformed type of authority in suggesting that it can write standards based only on its own projections of what might someday come to be. In the end, EPA is squeezing out coal-fired facilities and restricting the use of gas-fired facilities in the same pervasive way that it attempted to do in *West Virginia,* just less transparently. In the absence of a clear statement from Congress, which does not exist, EPA cannot do this.

IV. The Rule also destroys statutorily mandated State discretion. Congress gave States the power to create standards of performance for existing sources. Yet the Rule includes "presumptive" standards that

States must embrace unless they can convince EPA that they have come up with a better idea. Section 7411 also contemplates that States will have room to set standards that account for source-specific facts like remaining useful life and other factors. Yet here again, the Rule conjures a new, higher burden of proof for the States even though they best know the sources within their borders. Relegating States to second fiddle in this way is inconsistent with the Act.

V. The Rule improperly subcategorized facilities based on retirement dates—an approach that illegally focuses on *non*-performance when the whole object is setting standards of *performance*.[4]

VI. Were all these fundamental issues not enough, the Rule also presents an array of other problems in both its understanding of the statutory scheme and its lack of reasoned decisionmaking. For instance, the Rule purports to regulate power plants under Section 7411 even though those facilities are already regulated under Section 7412—a form

[4] Petitioners Edison Electric Institute, Electric Generators for a Sensible Transition, Idaho Power Company, Montana-Dakota Utilities Co., Oklahoma Gas and Electric Company, and the Westmoreland Petitioners do not join Section V. Petitioner Edison Electric Institute joins Section I.A and takes no position on the remaining arguments.

of double regulation the statute forbids. EPA also ignored the special considerations that apply to coal-refuse-fired facilities.

STANDING

Petitioners include States that the Rule forces to implement federal policy, electric utilities that own or operate facilities the Rule regulates, coal companies that will have to reduce operations or close mines because of the Rule's shift away from coal-fired electric generation, and labor unions representing workers who will lose jobs as a result of the Rule. *See, e.g.*, ECF No. 2054190 at 16-20 (detailing harms to States); ECF Nos. 2054191 at 19-21, 2056352 at 19-22, 2056364 at 13-28 (same as to electric generators); ECF No. 2056359 at 14-21 (same as to power plant and coal mine owners). Individual Petitioners have standing because they have suffered an injury-in-fact from the Rule that is redressable by the relief they seek. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992). Trade association Petitioners have standing on behalf of their members. *Sierra Club v. EPA*, 292 F.3d 895, 898 (D.C. Cir. 2002).

The Supreme Court has already recognized there is "little question" that regulations under Section 7411(d) like the Rule "do[] injure the States, since they are the object of [the Rule]'s requirement that they

more stringently regulate power plant emissions within their borders." *West Virginia*, 597 U.S. at 719 (cleaned up). Moreover, only one Petitioner needs to establish standing. *Biden v. Nebraska*, 143 S. Ct. 2355, 2365 (2023).

STANDARD OF REVIEW

The Court "may reverse" any final EPA action that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; contrary to constitutional right, power, privilege, or immunity; in excess of statutory jurisdiction, authority, or limitations, or short of statutory right . . . ." § 7607(d)(9). The Act's review standards track those of the Administrative Procedure Act. *Maryland v. EPA*, 958 F.3d 1185, 1196 (D.C. Cir. 2020) (per curiam). The Court "must exercise independent judgment in determining the meaning of statutory provisions." *Loper Bright Enters. v. Raimondo*, 144 S. Ct. 2244, 2262 (2024). At the same time:

> Agency action is arbitrary and capricious if [the agency] has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a

> difference in view or the product of agency expertise.

Sinclair Wyo. Ref. Co. v. EPA, No. 22-1073, 2024 WL 3801747, at *10 (D.C. Cir. July 26, 2024) (cleaned up).

ARGUMENT

I. EPA acted unlawfully in mandating a 90%-capture CCS system as the BSER.

Under Section 7411, EPA must set a "standard of performance . . . which reflects the degree of emission limitation *achievable* through the application of the best system of emission reduction which . . . *has been adequately demonstrated*." § 7411(a)(1) (emphases added). The standard of performance must also "tak[e] into account the cost of achieving such reduction and . . . energy requirements[.]" *Id.*

The "system" EPA selected for existing coal-fired and new base load gas-fired power plants is "90 percent CCS": capturing, transporting, and storing at least 90% of the annual CO_2 emissions from each covered facility.[5] CI8244 (89 Fed. Reg. at 39,801-02). Despite insisting its BSER

[5] Following EPA's usage, Petitioners use "facility" to refer to an individual electric generating *unit* regulated by the Rule, even though that term "is often understood colloquially to refer to a single *power plant*, which may have one or more [facilities] co-located within the plant's boundaries." CI8244 (89 Fed. Reg. 39,842 & n.269). This brief uses

"has been adequately demonstrated," EPA has failed to identify even a single facility that has ever implemented a CCS system that consistently achieves EPA's standard of performance—because no such facility exists. Further, insurmountable challenges remain regarding how every covered facility could build and implement all three phases of a 90% CCS system—capture, transport, and storage—and do so within the seven-and-a-half-year timeframe the Rule requires.

EPA can defend the Rule only with an interpretation of Section 7411 divorced from the statutory text, asserting that crystal-ball predictions about what may be demonstrated in the future are sufficient to conclude that a technology "has been adequately demonstrated" now. That reinterpretation allows EPA to wave away present difficulties with the hope that time will solve all practical and technological problems. EPA also disregards many of the Rule's defects despite comments that flagged them, and it fails to identify record evidence to support its conclusions—the definition of arbitrary and capricious action. Neither is permissible.

"station" or "power plant" to refer to a single location having one or more facilities.

Separately, EPA failed its statutory duty to account for the cost of a nationwide 90% CCS system because it relied on an unlawful interpretation of its duty under Section 7411(a). Further, EPA unlawfully disregarded its statutory duty to take into account the effect of the Rule's performance standards on energy requirements, ignoring the admonitions of electric reliability coordinators throughout the Nation.

Each of these often-overlapping grounds for vacatur is addressed below.

A. EPA violated its statutory duty to ensure that 90% CCS "has been adequately demonstrated" and that the Rule's emission standard is "achievable."

1. EPA's statutory interpretation of "has been adequately demonstrated" and "achievable" is unlawful.

a. Standards of performance under Section 7411 must "reflect[] the degree of emission limitations *achievable* through the application of the best system of emission reduction which . . . [EPA] determines *has been adequately demonstrated*." § 7411(a)(1) (emphases added). But here, EPA cannot show that 90% CCS has been adequately demonstrated as a system for either coal- or gas-fired facilities, *see infra* Section I.A.2. So it tries to contort the statute's backward-looking text into a license to make

forward-looking projections. Specifically, EPA claims that Section 7411 somehow allows it to "reasonably project the development of a control system at a future time and establish requirements that take effect at that time." CI8244 (89 Fed. Reg. at 39,801); *see also, e.g.*, *id.* ("BSER can be forward-looking in nature and take into account anticipated improvements in control technologies."); CI8244 (*Id.* at 39,831) (defending propriety of making a "projection of what that particular system may be expected to achieve going forward"); CI8244 (*Id.* at 39,878 n.610) ("EPA may extrapolate based on its findings and project technological improvements in a variety of ways.").

That is wrong. The statute's plain text reflects that the relevant question is not what technology *may be developed in the future*, but what "*has been* adequately demonstrated" today. § 7411(a)(1) (emphasis added). "Congress' use of a verb tense is significant in construing statutes." *United States v. Wilson*, 503 U.S. 329, 333 (1992). That is why the Supreme Court "ha[s] frequently looked to Congress' choice of verb tense to ascertain a statute's temporal reach." *Carr v. United States*, 560 U.S. 438, 448 (2010). Here, "Congress used the present perfect tense to 'denot[e] an act that has been *completed*.'" *Id.* (quoting *Barrett v. United*

States, 423 U.S. 212, 216 (1976)) (emphasis added). That verb tense requires that the BSER's adequate demonstration take place by the time the agency promulgates the rule.

The terms "adequately" and "demonstrate" confirm this self-evident meaning. "Demonstrate" means "to show clearly," "to prove or make clear by reasoning or evidence," or "to illustrate or explain esp. with many examples." WEBSTER'S SEVENTH NEW COLLEGIATE DICTIONARY 220 (1970); *see also* AMERICAN HERITAGE DICTIONARY 192 (1969) (defining "demonstrate" as to "prove or make manifest by reasoning or evidence"). "Adequate" means "sufficient for a specific requirement." WEBSTER'S SEVENTH NEW COLLEGIATE DICTIONARY 11 (1970); *see also* WEBSTER'S NEW WORLD DICTIONARY OF THE AMERICAN LANGUAGE 16 (1970) (defining "adequate" as "enough or good enough for what is required or needed"). Thus, EPA must "show clearly," using "evidence" and "examples," that the emission control technology constituting the BSER is "sufficient for [the] specific [emission-reduction] requirement" that is being imposed.

The statutory requirement of "adequately demonstrated technology" leaves no space for EPA to select "emerging technology" as the BSER because the two concepts are in "inherent tension." *Sierra Club*

v. Costle, 657 F.2d 298, 341 n.157 (D.C. Cir. 1981). The chosen system of emission reduction must have "a proven track record." *West Virginia*, 597 U.S. at 759 (Kagan, J., dissenting). Or as EPA once attempted to assure this Court, it must be "already in place and successful within an industry." OA Transcript, *supra*, at 2.

Congress selected this language purposefully: projections, even those best made and supported, may not materialize. If EPA bases a new source performance standard on what it projects a system will be able to do someday, and then that projection does not materialize, what is the regulated community to do? It would be, by then, years too late to challenge the standard. *See* § 7607(b)(1) (requiring petitioners to seek judicial review within sixty days of a final rule). Thus, the standard would become a *de facto* prohibition on the type of source at issue. Worse still is what happens when EPA selects a BSER for an existing source based on a projection and that projection proves wrong. The only choices for the regulated community are to shut down by the standard's compliance deadline, leaving industry and consumers without a reliable energy source, or to violate the Act every day they operate thereafter. *See* § 7411(e).

Pointing in the same direction, Section 7411 requires that standards of performance be "achievable." § 7411(a)(1). A performance standard is "achievable" when the BSER can be applied "under the range of relevant conditions which may affect the emissions to be regulated," including under "most adverse conditions which can reasonably be expected to recur[.]" An achievable standard cannot be "purely theoretical or experimental." *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 434 (D.C. Cir. 1973).

To demonstrate that its performance standards are achievable, EPA must "(1) identify variable conditions that might contribute to the amount of expected emissions, and (2) establish that the test data relied on by the agency are representative of potential industry-wide performance, given the range of variables that affect the achievability of the standard." *Sierra Club*, 657 F.2d at 377. For that reason, a performance standard should represent the "least common denominator" that can "be reasonably achieved by [a] new source anywhere in the nation."[6] Thus, in addition to showing that its BSER has been adequately

[6] Letter from G. McCutchen, EPA, to R.E. Grusnick, Ala. Dep't of Envtl. Mgmt. at 1 (July 28, 1987), https://www.epa.gov/sites/production/files/2015-07/documents/crucial.pdf ("McCutchen Letter").

demonstrated, EPA must show that its BSER can in fact achieve the mandated standard of performance in all applicable operating conditions at the time of the rule's promulgation.

Statutory structure and context confirm all this. If Congress had wanted to enact a forward-looking requirement in Section 7411(a), it knew how. A neighboring subsection, for example, expressly authorizes EPA to "waive compliance with emission limits to permit a facility to test drive an 'innovative technological system' that has 'not [yet] been adequately demonstrated.'" *Am. Elec. Power Co. v. Connecticut,* 564 U.S. 410, 428 (2011) (quoting § 7411(j)(1)(A)). Section 7411(a), however, uses precisely the opposite formulation.

Similarly, Section 7521 expressly permits EPA to set "standards" for non-stationary sources (such as cars) "which reflect the greatest degree of emission reduction achievable through the application of technology which the Administrator determines *will be available* for the model year to which such standards apply." § 7521(a)(3)(A)(i) (emphasis added). That language, by its express terms, allows EPA to make a reasonable projection about the near future. By contrast, in Section 7411(a), Congress used the backwards-facing language of "*has been*

adequately demonstrated." § 7411 (emphasis added). EPA's construction ignores that deliberate choice by Congress, conflating an empirical inquiry into the present with a speculative projection about the future.

Yet more contextual support comes from more recent statutes in which Congress has supported technologies like CCS *without* mandating their adoption. For example, the Energy Policy Act of 2005 authorized funding for "clean coal" projects that "advance … environmental performance … *well beyond* the level of technologies that are in commercial service or *have been demonstrated* on a scale that the Secretary [of Energy] determines is sufficient to demonstrate that commercial service is viable as of August 8, 2005." § 15962(a) (emphases added). CCS projects have received such funding. In other words, Congress knew that attempts to develop technologies like CCS need taxpayer funding *because* they have not been demonstrated. *See also* CI0632 (Minnkota Comments 11-13) (CCS project eligible for Bipartisan Infrastructure Law funding because CCS technology has not been proven to work in its final form under expected conditions or in the operating environment).

At the same time, aware that agencies like EPA would seize on these funding programs as a basis for imposing mandatory requirements, Congress explicitly rejected that approach, providing in the statute that "[n]o technology, or level of emission reduction, solely by reason of the use of the technology, or the achievement of the emission reduction, by 1 or more facilities receiving assistance under this Act, shall be considered to be adequately demonstrated for purposes of section 7411 of this title." § 15962(i)(1). Congress has thus explicitly denied EPA the authority under Section 7411 to mandate these technologies as systems of emission reduction that purportedly have been adequately demonstrated. § 15962(i)(1). EPA chose to do so anyway. *See infra* n.9.

The history of Section 7411(d) guidelines further underscores that EPA must ground its BSER determinations in reality. Most Section 7411(d) rulemakings date from the Carter Administration. *See* 84 Fed. Reg. at 32,526 n.63. In those early regulations, EPA at least pointed to *some* technology then in commercial use that could achieve the emissions guidelines EPA set. *See, e.g.*, 42 Fed. Reg. 12,022, 12,022 (Mar. 1, 1977) (describing "plants having . . . scrubbers that underwent emission tests to obtain background data"); 41 Fed. Reg. 48,706, 48,706 (Nov. 4, 1976)

(noting "[m]any sulfur burning plants presently have horizontal dual pad or vertical panel type mist eliminators installed"); 44 Fed. Reg. 29,828, 29,829 (May 22, 1979) (noting "recommended" emission limitations were based on "control systems which meet this [emissions] level" and that timelines were "based on actual retrofit experience"); 45 Fed. Reg. 26,294, 26,294 (Apr. 17, 1980) (explaining "[f]our . . . plants achieved secondary scrubbing efficiencies of at least 75 percent"); *see also* 56 Fed. Reg. 24,468, 24,482 (May 30, 1991) (noting technology had been "adequately demonstrated" because "[c]ollection systems and control systems with 98 percent efficiency are demonstrated at about 25 landfills"). Here, by contrast, EPA imposes emission limitations based on a system it hopes *may* develop but has not actually been demonstrated: 90% CCS of an entire plant's annual emissions.

In sum, considering the statute's text, structure, and history, "the best reading of the statute," *Loper Bright*, 144 S. Ct. at 2266, forecloses the reading EPA adopted in the rule of the BSER as being forward-looking. Section 7411(a)(1) is backwards-looking and requires an emission standard be "achievable" *now*, based on a system that "*has been* adequately demonstrated."

b. EPA mounts a few different defenses of its atextual interpretation of Section 7411. All fail. It invokes the *noscitur a sociis* canon, which teaches that "'a word is known by the company it keeps.'" CI8244 (89 Fed. Reg. at 39,831 n.207 (quoting *Dubin v. United States*, 599 U.S. 110, 124 (2023)). But instead of pointing to other words used alongside "adequately demonstrated" in Section 7411—such as "achievable"—EPA cites a completely different section of the Act. CI8244 (*Id.* at 39,831). EPA emphasizes that, in a wholly different context, "the word 'demonstrations' appears alongside 'research,' 'investigations,' 'experiments,' and 'studies'—all words suggesting the development of new and emerging technology." *Id.* (quoting § 7403(a)(1)).

Whatever support that may or may not provide for what the word "demonstrations" means in Section 7403, which involves the establishment by EPA of "a national research and development program for the prevention and control of air pollution," it offers no insight into the meaning of "has been adequately demonstrated" in the much different context of Section 7411(a), where experimentation is nowhere to be found.

EPA next cites a variety of this Court's precedents to cobble together authority to base the Rule on moonshot projections, but these decisions are inapposite. EPA cites this Court's statement that "'*where data are unavailable* . . . EPA may compensate for a shortage of data through the use of other qualitative methods, including the reasonable extrapolation of a technology's performance in other industries.'" CI8244 (89 Fed. Reg. at 39,832) (emphasis added) (quoting *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1999)).

But first, the parties in that case *agreed* that the technology at issue was adequately demonstrated. *Lignite*, 198 F.3d at 933. So the minor extrapolation this Court allowed related only to whether a particular emissions rate based on that technology was achievable—not whether the technology had been demonstrated. *See id.*[7] Second, there is no "shortage of data" here. Rather, EPA's problem is that all existing data cut strongly against 90% CCS, as they identify no facility anywhere in the world has demonstrated that system or achieved that standard. The

[7] EPA had data on the performance of the technology in "utility boilers," but not in "industrial boilers." *Lignite*, 198 F.3d at 934. Because of the similarity between these sources, and how the system performed in them, the Court held it was reasonable for EPA to extrapolate from successful application of the system in similar settings. *Id.*

data only highlight the currently insurmountable barriers to implementing such a CCS system—including the transport and storage pieces of it—nationwide, in the many settings covered by the Rule. *See infra* Section I.A.2.b.

EPA similarly invokes *Sierra Club* to support its claim it "may set a standard more stringent than has regularly been achieved based on its identification of specific available technological improvements to the system." CI8244 (89 Fed. Reg. at 39,831) (citing *Sierra Club*, 657 F.2d at 298). As in *Lignite*, the minor extrapolation this court approved in *Sierra Club,* applied only to whether EPA's standard was *achievable* for new sources. *Sierra Club*, 657 F.2d at 325, 326. Even then, the extrapolation was only a tiny step forward from what had been consistently achieved in practice—from a demonstrated 86% pollutant-removal to a 90% pollutant-removal requirement. *Sierra Club,* 657 F.2d 356, 367-68. And even as to that incremental step, *Sierra Club* upheld the relevant standard because EPA presented evidence that existing technology (scrubbers), which had demonstrated 86% removal capability, could be coupled with another adequately demonstrated method (coal-washing) to enable industry to meet a 90% standard. 657 F.2d at 368.

Sierra Club does not hold that EPA can set a 90% standard based solely on evidence of 86% removal and the hope and prayer that future sources will improve upon it, even slightly, to reach 90%. Indeed, this Court refused to "accept EPA's 92 percent median solely on the basis of evidence that only one commercial scale plant and one small pilot unit can almost but not quite meet the standard." *Id.* at 363. Here, meanwhile, EPA mandates no mere incremental step, but rather a giant leap to a 90% CCS system that no facility has ever come close to consistently achieving. To the extent EPA "may make a projection based on existing technology, . . . that projection is subject to the restraints of reasonableness and cannot be based on [such a] 'crystal ball' inquiry." *Portland Cement Ass'n v. Ruckelshaus*, 486 F.2d 375, 391 (D.C. Cir. 1973). EPA crossed the line here.

EPA then shifts focus to *Essex Chemical* for the proposition that "'[a]n achievable standard . . . need not necessarily be routinely achieved within the industry prior to its adoption.'" CI8244 (89 Fed. Reg. at 39,835) (quoting *Essex*, 486 F.2d at 433-34); *see also* CI8244 (*Id.* at 39,830) (claiming that a BSER "need not be in widespread use at the time the EPA's rule is published"). But the Rule's 90% CCS standard has *never*

been achieved on a *consistent annual* basis at *any* facility within the power industry. This is not a situation where the standard has been achieved consistently somewhere but is not widely in use yet, which is what *Essex* contemplated. This is a situation where the standard has not been achieved anywhere, at any time. At the very least, a BSER must be in use and consistently achieving the mandated standard of performance *somewhere* before it can be required *everywhere*.

In sum, whatever incremental projections this Court's precedents authorize EPA to make when determining what is presently "achievable" and "has been adequately demonstrated," they do not permit those terms to be read so capaciously as to encompass a system that has never been accomplished anywhere. Nor do they provide cover for EPA's soothsaying about possible forthcoming breakthroughs that might make 90% CCS systems viable for all power-industry sources within the Rule's scope.[8]

c. At some points in the Rule, EPA attempts to downplay the extent to which its Rule depends on future-oriented projections, claiming

[8] Additionally, to the extent that this Court's precedents grant EPA some limited ability to extrapolate about what will be possible in the future, those precedents are in error because they are contrary to the "best reading" of the Act. *Loper Bright*, 144 S. Ct. at 2266.

that "CCS is already in existence." CI8244 (*Id.* at 39,830 n.202). That is misdirection. To be sure, CCS technology with some unspecified level of capture operating in limited settings does exist. However, CCS with a consistent annual 90%-capture, capable of implementation at coal-fired power plants and new base load gas-fired power plants—which is what the Rule requires—has never been achieved at any plant, anywhere. Adequate demonstration of the former does not even begin to approach adequate demonstration of the latter.

That is why the Rule must turn to "projection[s]," "prediction[s]," "extrapolation[s]," "anticipated improvements," and other "forward-looking" mechanisms to attempt to bridge the significant gap between what has been adequately demonstrated and what is being mandated in the Rule. *See*, *e.g.*, CI8244 (*Id.* at 39,801, 39,830 n.202, 39,831, 39,832, 39,878 n.610, 39,889, 39,926).

Similarly, EPA elsewhere proclaims that "*although the EPA is not relying on this point for purposes of these rules*, it should be noted that the EPA may determine a system of emission reduction to be adequately demonstrated based on some amount of projection, even if some aspects of the system are still in development." CI8244 (*Id.* at 39,832 n.223)

(emphasis added). Yet in the very next sentence, EPA explains that "the authorization for lead time [in the Rule] accommodates *the development of projected technology*." *Id.* (emphasis added).

Both cannot be true. Either EPA is "not relying on . . . projection[s]" or it is allowing nearly eight years of "lead time . . . [to] accommodate[] the development of projected technology" necessary for its chosen BSER. That "internal inconsistency" is fatal to the Rule. *Ark. Dep't of Health & Hum. Servs. v. Ahlborn*, 547 U.S. 268, 292 (2006). It also lays bare the reality that EPA had no choice but to unlawfully rely on projections of future technological development to defend promulgation of a standard of performance that not one facility anywhere has yet achieved.

d. In its Response to the Stay Applications pending before the U.S. Supreme Court, EPA took a different tack entirely. EPA did not defend the Rule's core claim that a BSER that is merely "anticipated" or "reasonably project[ed]" can nevertheless be "adequately demonstrated" under Section 7411. CI8244 (89 Fed. Reg. at 39,801). Instead, the agency argued that its chosen BSER was lawful because that BSER had already been "shown to be reasonably reliable" and "reasonably efficient," Brief for Respondent at 24, *West Virginia v. EPA* (2024) (No. 24A95) (emphasis

added) (*quoting Essex*, 486 F.2d at 433), and then cherry-picked out-of-context quotations from the Rule to claim falsely that this reading of Section 111(d) was the basis for the Rule, *see, e.g.*. *id.* at 30. That approach by EPA in this Nation's highest court is a tacit concession that the future-oriented understanding of Section 111(d) in the Rule itself—including in EPA's aggressive misreading of some of this Court's precedents as adopting that future-oriented approach—is indefensible under the statutory text, and especially so in a post-*Chevron* era.

But even if it were permissible for EPA to defend the Rule on a basis that is not the fairest reading of the rationale found in the Rule at issue, EPA's position before the U.S. Supreme Court would defeat the Rule. While EPA before the Supreme Court pointed to the Rule's assertion that "carbon capture writ large has been adequately demonstrated," Resp.26 (citing 89 Fed. Reg. at 39,846), that claim is legally irrelevant. The BSER that EPA selected was not CCS "writ large"—whatever that means—but full-facility, continuous 90% CCS. There is no argument that any plant has actually demonstrated full-facility continuous 90% CCS, which is fatal to the Rule under the statutory text.

* * *

EPA's embrace of 90% CCS as the BSER for all existing coal- and new base load gas-fired power plants in the Nation rests on a fundamental misreading of the statutory text. This misconception caused EPA to ask the wrong question at the outset of its BSER analysis—improperly focusing on what CCS may be capable of someday rather than what system has been adequately demonstrated and what emission limitation is achievable *today*—poisoning the entire exercise. This fundamental error by itself warrants vacatur. *See Util. Air Regul. Grp.*, 573 U.S. at 325-26 (vacating in relevant part a regulation that "rewr[ote] unambiguous statutory terms" and therefore "went well beyond the bounds of [EPA's] statutory authority" (cleaned up).

2. EPA erred in concluding 90% CCS "has been adequately demonstrated" and in declaring the emission limitation based on that system to be "achievable."

EPA committed related errors when it went from interpreting the statute to applying it. The agency acted beyond its statutory authority and acted arbitrarily and capriciously in selecting 90% CCS as the BSER given that it has never been demonstrated anywhere, is currently impossible for almost all covered facilities to implement, and cannot be constructed and implemented in the Rule's timeframe. EPA then

compounded those errors by ignoring comments on the Proposed Rule that pointed out these fundamental flaws. The result is a Rule that stacks error upon error and must be vacated. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 536 (2009) ("[A]gency action must not be 'in excess of statutory jurisdiction, authority, or limitations, or short of statutory right.'" (quoting 5 U.S.C. § 706(2)(C)); *FCC v. Prometheus Radio Project*, 592 U.S. 414, 423 (2021) ("arbitrary-and-capricious standard requires that agency action be reasonable and reasonably explained").

a. No facility anywhere has implemented the consistent annual 90% CCS system mandated by the Rule.

A system has not "been adequately demonstrated" when *no one* has ever successfully employed it. EPA cannot cite even a single example of a *facility* having demonstrated the Rule's 90% CCS system. That failure disqualifies 90% CCS from being a permissible BSER under Section 7411. Faced with comments detailing this fault during the rulemaking process, EPA failed entirely to "supply 'a satisfactory explanation for its action'" and "instead ignored '[this] important aspect of the problem' before it." *Ohio v. EPA*, 144 S. Ct. 2040, 2054 (2024) (quoting *Motor Vehicle Mfrs. Assn. of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.,* 463 U.S. 29, 43

(1983)). Armed with only a few scattered examples that fall short of the consistent 90% CCS required by the Rule, EPA forged ahead with its BSER and set a standard of performance that is not "achievable." That action runs counter to the evidence before it, and it exemplifies arbitrary and capricious agency action.

i. EPA proffers a handful of coal-fired power plant examples that have used some degree of CCS. The three most prominent are one facility in Canada and two domestic facilities with partial CCS implementation. But not one has ever come close to the facility-wide 90% capture, transport, and storage of all annual CO_2 emissions that the Rule mandates—a deficiency EPA ignores.

EPA's leading purported example is Boundary Dam, a Canadian project that began operating in 2015. *See* CI8244 (89 Fed. Reg. at 39,847). But Boundary Dam has never demonstrated EPA's *90%*-capture system. CI0770 (NRECA Comments 11); CI0770 (NRECA-EERC Comments 6). EPA's Proposed Rule said it had. CI0001 (88 Fed. Reg. at 33,291). Then Boundary Dam's operator set the record straight. CI0687 (SaskPower Comments 1). It told EPA: "SaskPower's CCS facility *is not capturing 90 per cent* of emissions from Boundary Dam Unit 3." *Id.* (emphasis added).

During a short 72-hour test in 2015, Boundary Dam *once* captured "89.7 percent" of total emissions. CI8244 (89 Fed. Reg. at 39,848). Since then, Boundary Dam has suffered constant "technical issues," requiring "consistent[] . . . modifications . . . to stabilize operations" and "improve reliability." CI0687 (SaskPower Comments 1). So, "[t]o ensure a higher level of overall equipment reliability and process efficiency," the facility "targets" a capture rate of "65 to 70 per cent[.]" *Id.*

Boundary Dam also has not demonstrated CO_2 capture from an *entire* facility. Boundary Dam captures CO_2 only from what the industry calls a "slipstream" system. CI8244 (89 Fed. Reg. at 39,848). Slipstream systems siphon and process a *partial,* fixed, constant stream of a facility's total emissions. *See, e.g.,* CI0770 (NRECA-EERC Comments 5). The rest "is released to the atmosphere." CI0687 (SaskPower Comments 1). Slipstreams function reliably because gas pressures and volumes are static and controllable within that partial stream. *See* CI8244 (89 Fed. Reg. at 39,853 n.358) ("[P]rocess value[s], such as flowrate, throughput or capacity . . . are designed to operate within specific ranges . . . ."). In contrast, operation of CCS on a *full*-stream system would need to contend with dynamic pressure and volumes, shifting as the facility responds to

electricity demand. *See* CI0770 (NRECA-Cichanowicz Comments 3 & n.7). These two systems are categorically different, and it is much easier to operate CCS on a slipstream. *See id.*

Boundary Dam captures only from a slipstream because the full emissions stream "*cannot* be processed through the CCS facility[.]" CI0687 (SaskPower Comments 1 (emphasis added)). That is especially notable because Boundary Dam was "designed" to operate as a full-stream capture system. CI8244 (89 Fed. Reg. at 39,848). But the full-stream design has never reliably worked, even after almost a decade. CI0687 (SaskPower Comments 1). That failure shows the folly in EPA's near-total reliance on projects that are merely "proposed," "designed," "planned," or "targeted for completion." CI8244 (89 Fed. Reg. at 39,927, 39,848, 39,551). It also shows the wisdom of Congress's decision requiring a system to be adequately demonstrated *before* EPA mandates it for nationwide use.

Moreover, Boundary Dam has not demonstrated capture on the continuous, annualized basis the Rule requires. EPA claims Boundary Dam "achiev[es] capture rates of 83 percent *when the capture plant is online."* CI8244 (*Id.* at 39,848) (emphasis added). That qualifier obscures

this project's persistent breakdowns. *See* CI0770 (NRECA Comments 11); CI0770 (NRECA-EERC Comments 6). From early 2021 to early 2023, Boundary Dam's slipstream CCS system was "online" only about 65% of the time. CI0770 (NRECA Comments 19). EPA concedes this system was continually "affected by technical issues[.]" CI8244 (89 Fed. Reg. at 39,848). SaskPower acknowledged the same. CI0687 (SaskPower Comments 1). For these reasons, Boundary Dam does not approach 90%-capture when judged on the Rule's annual, facility-wide metric. CI0772 (EEI Comments 72-74).

EPA's response to this litany of problems consists of forward-looking, Pollyanna optimism—claiming Boundary Dam's technical issues "will definitively not occur in a different type of . . . system" and that "key improvements can be implemented in future CCS deployments during initial design and construction." CI8244 (89 Fed. Reg. at 39,849). So much for EPA's claim that it does not rely on projection and extrapolation. *See supra* Section I.A.1.c. Speculation that future plants will be able to dodge past problems fails to show the system "has been adequately demonstrated." So too for speculation that the *next* power plant's

"different type of system" will not create new problems, or that those new problems will be solvable. The Act prohibits all of this.

In the end, EPA cannot wave away the fact that Boundary Dam—its *best* example—has not adequately demonstrated anything close to the continuous 90% CCS system required by the Rule. Nor can EPA square its best-case thinking with its duty to mandate an emissions limit that can be achieved "under most adverse conditions which can reasonably be expected to recur[.]" *Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 431 n.46 (D.C. Cir. 1980); *see also id.* at 431 (focusing on "the 'achievability' of the promulgated standards for the *industry as a whole*" (emphasis added)).

EPA next cites Plant Barry as an example of a "fully integrated 25 [megawatt ("MW")] CCS project with a capture rate of 90 percent." CI8244 (89 Fed. Reg. at 39,850). But once again that slipstream CCS project captures just a *fraction* of the CO_2 output of *one facility*. CI0710 (PGen Comments 26-27, 34). Judged by the Rule's continuous, facility-wide standard, Plant Barry achieved less than 5% capture. CI0622 (Buckeye Inst. Comments 10). As such, it cannot demonstrate the continuous, facility-wide 90% capture the Rule mandates. EPA offers no response to this serious critique.

EPA then points to the Petra Nova project, which "was designed to capture 90 percent of 37 percent of the flue gas produced by a single [facility] that was part of the larger [station.]" CI0772 (EEI Comments 72); *see* CI8244 (89 Fed. Reg. at 39,849-50). That "37 percent" refers to a slipstream of the flue gas. Technical problems kept this project "offline for more than a third of the time that it was operational before it was shut down in 2020." CI0770 (NRECA Comments 11); *see also* CI0770 (NRECA-EERC Comments 6) ("During its 3-year operation, it suffered frequent outages[.]"); CI0770 (NRECA-Cichanowicz Comments 10) (discussing the "failure" of components "necessary" for CCS).

Petra Nova captured only 33% of the facility's (and less than 10% of the eight-facility station's) CO_2 emissions when judged under the Rule's metric. CI0772 (EEI Comments 72). While EPA acknowledges Petra Nova "experienced some technical challenges" (an extraordinary understatement), EPA ignores that Petra Nova's capture rates are far below what the Rule requires. CI8244 (89 Fed. Reg. at 39,849-50).[9]

[9] Even if Petra Nova and Plant Barry could support a determination of adequate demonstration, the dispositive fact would remain that those plants received Energy Policy Act of 2005 funding and therefore cannot be used to supply necessary support in the adequate-demonstration analysis. CI8244 (89 Fed. Reg. at 39,852 n.334); § 15962(i)(1).

EPA's remaining examples fare worse. CCS slipstream projects at the Warrior Run power plant in Maryland and the Shady Point power plant in Oklahoma captured just 10% and 5% of CO_2 emissions, respectively. CI8244 (*Id.* at 39,849).

ii. Unable to identify any facilities that show 90% CCS has been adequately demonstrated, EPA next tries to point to "planned" or "studied" CCS projects. But even if projects that have not yet broken ground could support an adequately-demonstrated determination (which they cannot), EPA's cited projects offer no support.

For example, the Rule devotes an entire subsection of the preamble to Project Tundra, which is being developed by Minnkota Power Cooperative—a member of Petitioners National Rural Electric Cooperative Association and America's Power. *See* CI8244 (*Id.* at 39,850-51). If built, Project Tundra would "be the largest [CO_2] capture system in the world[.]" CI0632 (Minnkota Comments 13). Indeed, Project Tundra is *attempting to demonstrate* a technological feat—a 70% CCS system—that has not yet been achieved anywhere. CI0632 (*Id.* at 12).

But even with substantial State and federal funding, and "exceptional geology" yielding a storage site just a quarter mile away,

Project Tundra's future is in doubt because it "would not fully comply with" the Rule. CI0632 (*Id.* at 2, 16). "Once completed, Project Tundra will be able to scrub the CO_2 emissions at Young Unit 2 (a 455 MW unit) and 30% of the CO_2 emissions at Young Unit 1 (a 250 MW unit)." CI0548 (Otter Tail Comments 27). Even though this would "be the largest capture system in the world and [would] rely on the largest single train system that can be built[,]" it *still* would "not meet the presumptively approvable emission rate" under the Rule. *Id.*

Project Tundra's design alone "took almost nine years of study and engineering[.]" CI0632 (Minnkota Comments 16). The Rule would require Minnkota to ditch those plans (sinking ten years of work and millions of dollars in engineering and planning) and either draw up new designs or shutter the station. CI0632 (*Id.* at 2). Even then, it is not clear that a redesign would succeed, because, again, 90% CCS has not been demonstrated anywhere.

Similarly, EPA points to the Dry Fork Power Plant owned by Basin Electric Power Cooperative (another member of Petitioners National Rural Electric Cooperative Association and America's Power). *E.g.*, CI8244 (89 Fed. Reg. at 39,814). Basin completed a CCS study two years

ago, evaluating whether Dry Fork could target a "70% capture" rate. CI0768 (Basin Comments 19). The study concluded that even attempting this 70% milestone would be "prohibitively expensive—with total project capital costs for the capture system alone exceeding 1.5 billion dollars." *Id.* This "would exceed the costs . . . to actually construct the Dry Fork Station" itself. *Id.* As with Boundary Dam and Project Tundra, EPA attempts to flip these facts, reasoning that an unbuilt, prohibitively expensive 70% CCS system somehow shows that 90% capture has already been adequately demonstrated. CI8244 (89 Fed. Reg. at 39,814).

These projects are still in development. They are not built yet—let alone operational—and they provide no support for EPA's position that CCS at 90% capture has been adequately demonstrated today. CI8244 (*Id.* at 39,850-51).

EPA next cites "vendor statements" and "planned" or "designed" projects to support its 90% CCS BSER determination. CI8244 (*Id.* at 39,848-51). While this Court has found vendor statements "informative," it has also made clear that "their support for the standard, taken alone, would not be decisive." *Sierra Club*, 657 F.2d at 364. The Court's skepticism is warranted because design estimates do not guarantee

consistent performance. After all, Boundary Dam was "designed" to capture 90% of its CO_2 emissions, and yet it cannot. Simply put, design does not equal demonstration. Accordingly, given the paucity of EPA's other support of its 90% CCS BSER, these aspirational statements cannot be decisive here.

iii. EPA's BSER determination for new gas-fired facilities has even less real-world support. EPA's main example of CCS at a gas-fired facility comes from a power station in Bellingham, Massachusetts. CI8244 (89 Fed. Reg. at 39,926). EPA asserts this CCS project achieved 85-95% CO_2 capture. *Id.* But again that number represents only the capture rate from a small slipstream of the station's total CO_2 emissions. CI0772 (EEI Comments 80-81); CI0770 (NRECA-Cichanowicz Comments 4); *supra* Section I.A.2.a.i. Judged under the Rule's definitions, Bellingham's CCS project captured less than 10% of the station's emissions—or, at most, 30% of a single facility's emissions—an important marker that EPA ignores. *See* CI0772 (EEI Comments 80-81); CI0770 (NRECA-Cichanowicz Comments 4). Nor did the Bellingham project transport or store captured CO_2, as required by the Rule. CI0772 (EEI Comments 81). And it closed in 2005. CI0710 (PGen Comments 26).

EPA also cites Technology Centre Mongstad, a Norwegian testing facility that is assessing CO_2 capture on a small slipstream of a single facility's emissions. CI8244 (89 Fed. Reg. at 39,852, 39,927 & n.768). Yet EPA declined to provide the CO_2 capture rate of that test project when measured on the continuous, facility-wide basis that the Rule requires. In any event, that EPA finds it necessary to invoke the performance of a tiny 12-MW slipstream at a test center, simply highlights the "absence of experience at large-scale facilities" and does not "justify extrapolating from the pilot scale data" to determine adequate demonstration "for full scale plants throughout the industry." *Sierra Club*, 657 F.2d at 341 n.157.

To shore up this grossly deficient record for *gas*-fired facilities, EPA invokes uses of CCS at *coal*-fired facilities. CI8244 (89 Fed. Reg. at 39,924). But EPA does not explain how those examples support 90% CCS as the BSER for a different type of generation that operates in a different way. The new gas facilities covered by the Rule propel turbines connected to an electric generator by combusting gas, like a jet engine.

Existing coal-fired facilities, on the other hand, combust coal in a boiler to heat and pressurize steam that propels a turbine. That "is not comparable or applicable to natural gas-based units given the different

engineering between coal powered steam turbines and natural gas combined cycle units." *See* CI0772 (EEI Comments 82); *see* also CI0770 (NRECA-Cichanowicz Comments 2) (noting the CO_2 content of the flue gas is "typically 3-4% CO_2 for [gas-fired] application and 11-13% CO_2 content for coal-fired application"). In any event, EPA's coal examples have fatal problems of their own, as detailed above, and thus could not save EPA's baseless BSER determination for new gas-fired facilities even if they were sufficiently similar (which they are not).[10]

iv. Lacking meaningful power-industry examples, EPA casts about for so-called "industrial applications" and claims they support its conclusion that "all components of CCS—CO_2 capture, CO_2 transport, and CO_2 sequestration—have been demonstrated concurrently, with each component operating simultaneously and in concert with the other components." CI8244 (89 Fed. Reg. at 39,846). But, as discussed below, none of these industrial applications has achieved the consistent 90% capture the Rule requires, much less been paired with a system to

[10] Tellingly, a DOE report cited by EPA (CI8244 (89 Fed. Reg. at 39,926 n.763)) expressly caveats that CCS systems for gas-fired facilities "have not been proven at full scale" and that "more effort and [research and development] is required to advance into full commercial application." CI8734 (DOE Gas CCS Report 2, 4).

transport and sequester the captured CO_2. Claiming a BSER "has been adequately demonstrated" without identifying a single facility that has ever achieved it is quintessential arbitrary action.

EPA first points to the Searles Valley Minerals/Argus Cogeneration Plant that provides power to a soda ash plant and captures about 270,000 metric tons of CO_2 annually. CI8244 (*Id.* at 39,846-47). But EPA does not provide information on what percentage of the plant's annual emissions this represents, meaning it is impossible to know whether this represents 90% capture or far less. All indications are that the capture rate does not remotely approach 90%. *See* CI0770 (NRECA-EERC Comments 5) (estimating 18% capture rate for the station); CI0770 (NRECA-Cichanowicz Comments 3) (estimating 33% capture rate for single facility at the station). Moreover, EPA cannot claim this project transports or stores the captured CO_2—because it does not. CI9095 (GHG Mitigation Measures-Steam TSD, Att. 12 at 37-38). Accordingly, this example demonstrates only that some unspecified level of CO_2 capture—without the transport and storage the Rule requires—can be achieved in an industrial setting.

EPA also cites the Shute Creek Facility and the Great Plains Synfuels Plant, but once again identifies only the total volume of CO_2 captured per year, ignoring whether that amount represents the required 90% capture. CI8244 (89 Fed. Reg. at 39,847). Worse, at least for the Great Plains Synfuels Plant, the record shows it attained only "partial" (50%) CO_2 capture, without detailing the degree of efficiency achieved. CI9095 (GHG Mitigation Measures-Steam TSD, Att. 12 at 41). EPA's refusal to consider the actual capture percentage cannot be countenanced given the backdrop of the Rule's strict 90% capture mandate.

Additionally, both Shute Creek and Great Plains use "*precombustion* CO_2 capture," which "is not considered a leading technology for . . . electrical generation[.]" CI0770 (NRECA-EERC Comments 2) (emphasis added); *see* CI8244 (89 Fed. Reg. at 39,847). Indeed, in defining "CCS," the Rule itself says "[t]his technology [*i.e.*, CCS] is referred to as '*post*-combustion capture[.]'" CI8244 (89 Fed. Reg. at 39,846) (emphasis added). Thus, a *pre*-combustion system cannot show that the *post*-combustion capture that the Rule is premised on has been demonstrated. *See also* CI8244 (*Id.* at 39,847-48).

Last, EPA relies on the Quest steam methane reformer facility in Alberta, which purportedly "capture[s] and sequester[s] approximately 80 percent of the CO_2 in the produced syngas." CI8244 (*Id.* at 39,847). First, that still falls below EPA's 90%-capture requirement. Second, the efficiency metric reported relates to CO_2 capture from manufacturing hydrogen—not from fossil fuel combustion to produce electricity. CI0053 (Quest CCS Annual Summary Report, Att. 24 at 1-1). Indeed, as EPA acknowledges, the CO_2 capture methods employed at Quest are "tailored to the flue gas conditions of a particular industry," rendering the efficiency metric inapposite here. CI8244 (89 Fed. Reg. at 39,847).

* * *

This is not a close call. No facility has deployed a 90% CCS system of the sort contemplated by the Rule. That means the Rule's selected BSER has not "been adequately demonstrated" and its emission standard is not "achievable." Given that dispositive fact, EPA is unable to "supply a satisfactory explanation for its action." *Ohio*, 144 S. Ct. 2054 (cleaned up). Its attempt to rely on far inferior CCS outcomes only confirms the emerging, still-developing nature of CCS. Petitioners hope CCS has a bright future, but much work remains to be done before 90% CCS can be

considered "adequately demonstrated" and EPA's associated emission standards "achievable," such that they could be mandated for deployment nationwide.

b. The three components of a CCS system cannot be timely achieved on all covered sources.

Even if EPA had shown that 90% CCS has been adequately demonstrated, the Rule would still fail because of the insurmountable problems with requiring every existing coal-fired and new base load gas-fired power plant in the Nation to implement all three components of a CCS system—*i.e.*, capture, transport, and storage—and to do so within less than eight years. EPA either ignores or brushes off these serious concerns. But that only adds further grounds for vacatur—the failure to reasonably explain agency action and respond to comments. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. at 536; *Prometheus Radio*, 592 U.S. at 423.

Capture. Building the capture piece of a CCS system is no small matter. As commenters explained, retrofitting existing sources is often prohibitively difficult given space constraints and technical challenges at facilities that already contain a broad array of control technologies and

other engineering requirements. CI0772 (EEI Comments 57); CI0710 (PGen Comments 42). EPA's answer is to point to its examples of small-scale or partial implementations of CCS as proof of concept. *See* CI8244 (89 Fed. Reg. at 39,848-50). But that optimism regarding the ability of CCS to scale up—particularly at existing facilities—is unfounded. EPA posits without example or elaboration that a large facility could install "multiple trains . . . of CO_2 capture equipment." CI8914 (Response to Comments ("RTC"), Chap. 4 at 40). But notably absent is an explanation of *where* existing power plants could realistically site several separate capture plants—despite many commenters raising concerns about spatial constraints with retrofits. Nor does EPA's rosy view explain how building several capture plants would be cost-effective or could overcome the significant challenges in convincing State regulatory commissions to approve and finance them, let alone securing billions of dollars of funding from rural electric cooperative members. CI0772 (EEI Comments 57, 77 & n.68); CI0770 (NRECA Comments 4). EPA also ignores that if the Rule goes into effect, all covered plants across the Nation will be racing to secure components and contractors at the same time, leading to shortages and increased costs.

EPA's best-case-scenario thinking "ignore[s] [this] important aspect of the problem." *Ohio*, 144 S. Ct. at 2054 (cleaned up). It also contravenes EPA's duty to mandate a standard "capable of being met under most adverse conditions which can reasonably be expected to recur[.]" *Nat'l Lime Ass'n*, 627 F.2d at 431 n.46.

Transport. The massive amount of CO_2 EPA requires to be captured[11] must be transported from the facilities to wherever its ultimate storage site will be. This requires access to a sufficient and suitable pipeline network to supply the necessary link between CO_2 "capture" and "storage." That transport link is missing almost everywhere. CI0770 (NRECA Transp. Storage App'x 4) ("Today CO_2 pipelines exist only in the Gulf region, West Texas, and the Rockies."); CI0770 (*Id.* at 18) ("CO_2 pipelines do not exist today in a geographic dispersion even close to that of the fossil-fuel [electric-generating] fleet."); *accord* CI9095 (EPA Technical Support Doc. 36). And to enable transporting the captured CO_2 from all facilities, "115,000 miles of CO_2

[11] To put this in perspective, Searles Valley captures approximately 270,000 tons of CO_2 annually. CI8244 (89 Fed. Reg. at 39,846). In 2020, EPA says the power sector emitted 1,439 million tons of CO_2—with more than half of those emissions coming from existing coal-fired facilities. CI8244 (*Id.* at 39,823).

pipeline would need to be constructed." CI0769 (Tenn. DEC Comments 14); *see* CI0520 (CCES Comments) ("[T]he quantity of [CO_2] pipeline miles will need to increase more than tenfold . . . ."); CI0770 (NRECA Transp. Storage App'x 22) ("[C]onstruction of 2,800 miles of 30-inch pipeline . . . would eclipse the available throughput capacity of the existing CO_2 pipeline capacity . . . . [but] still would provide less transportation capacity than the output of the ten largest coal-fueled power plants in the country.").

EPA speculates a vast network of CO_2 pipelines "may develop" "in the coming years." CI8244 (89 Fed. Reg. at 39,855). But despite CO_2 transport occurring "for nearly 60 years," to date CO_2 pipelines exist only in limited areas and with limited capacity. CI8244 (*Id.*). While the Proposed Rule touted nearly 4,000 miles of newly "announced" CO_2 pipelines, CI0001 (88 Fed. Reg. at 33,294), most have since been "delayed or canceled," *see, e.g.*, CI8182 (EEI Supplemental Comments 31); CI8119 (NRECA Supplemental Comments 2). And EPA acknowledged in the Proposed Rule that the U.S. has accomplished only a "13 percent increase in CO_2 pipeline miles since 2011." CI0001 (88 Fed. Reg. at 33,294). So

although CO_2 transportation might be available for a few facilities by 2032, it will not be for the vast majority.

EPA attempts to deflect by asserting that *most* facilities have access to potential geologic storage nearby, rendering extended pipeline networks unnecessary. CI8244 (89 Fed. Reg. at 39,861). But many facilities lack such access. In particular, EPA has conceded that some 20% of coal plants reside over 100 kilometers from the nearest potential sequestration site and will need to construct an interstate pipeline. CI8244 (*id.* at 39,860); *see also* CI0768 (Basin Comments 16) ("[M]any, if not most states, lack the geology as well as the legal or regulatory schemes related to pore space and carbon storage necessary to facilitate large carbon storage projects."); CI0770 (NRECA Transp. Storage 17) (similar); CI0542 (East Kentucky Comments 28) (similar).

Again, "[t]o be achievable, . . . a uniform standard must be capable of being met under *most adverse* conditions which can reasonably be expected to recur." *Nat'l Lime Ass'n*, 627 F.2d at 431 n.46 (emphasis added); *see also West Virginia*, 597 U.S. at 701 (emission limits are not achievable when, "by design, there are no particular controls a coal plant operator can install and operate to attain the emissions limits"). EPA

cannot look only to the *most favorable* conditions and claim its emission limitations are achievable.

Regardless, even shorter pipelines require permits before they can be constructed or operated. EPA's unsupported claim that shorter pipelines "would not likely be as challenging to permit and build," CI8244 (89 Fed. Reg. at 39,861), defies the reality of constructing modern pipeline infrastructure. *See, e.g.*, *PennEast Pipeline Co. v. New Jersey*, 594 U.S. 482, 490-92 (2021) (describing six-plus years of regulatory proceedings and litigation to simply secure right to condemn land needed for a 116-mile gas pipeline); CI0770 (NRECA Comments 11-12) (addressing time needed for pipeline construction).

Indeed, EPA itself presents an example of a pipeline *less than 1.2 miles long* that took nearly four years to go from obtaining funding to completion.[12] Pipeline projects of any size are routinely mired in citizen

[12] CI8244 (89 Fed. Reg. at 39,859) ("ADM's Decatur, Illinois, pipeline, which spans 1.9 km (1.18 miles), was constructed after Decatur was selected for the DOE Phase 1 research and development grants in October 2009. Construction of the CO_2 compression, dehydration, and pipeline facilities began in July 2011 and was completed in June 2013.").

suits or regulatory litigation.[13] There is neither evidence nor reasoning in the record to support EPA's apparent view that property owners and citizen groups will not legally challenge, and that local regulators will roll out the red carpet for, CO_2 transport pipelines simply because EPA desires that such pipelines be built. On the contrary, various groups have emerged, both nationally and in areas specific to proposed projects, to oppose CO_2 pipelines. CI0770 (NRECA Transp. Storage 20).

EPA's refusal to confront the commenters' serious concerns regarding the possibility of timely constructing the needed CO_2 pipelines is arbitrary and capricious.

Storage. Similar issues plague the storage piece. CO_2 storage is simply not widely available and is not projected to be on EPA's time horizon. Only 14 commercial CO_2 storage facilities presently operate in the United States, one of which is already in its "post-injection phase" and thus physically unable to receive more CO_2. CI8244 (89 Fed. Reg. at 39,865). The rest do not even come close to accommodating the Rule's

[13] *E.g.*, *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) (Sabal Trail); *Sierra Club v. U.S. Army Corps of Eng'rs*, 909 F.3d 635 (4th Cir. 2018) (Mountain Valley Pipeline); *Sierra Club v. W. Va. Dep't of Envt'l Prot.*, 64 F.4th 487 (4th Cir. 2023) (Mountain Valley Pipeline).

requirements. Indeed, storing CO_2 from the single largest U.S. coal-fired facility alone would require three times the capacity of the largest permitted storage site. *See* CI0770 (NRECA Transp. Storage 17).

EPA claims "*[m]ost* coal-fired steam [facilities] . . . are located in relatively close proximity to deep saline formations that have the *potential* to be used as long-term CO_2 storage sites." CI8244 (89 Fed. Reg. at 39,855) (emphases added). But that, once again, highlights that EPA's reliance on what it hopes will develop rather than what has been demonstrated and improperly focuses on the Rule's application in the most favorable rather than "most adverse" operating conditions. *Nat'l Lime Ass'n*, 627 F.2d at 431 n.46. Even then, "potential" deep storage sites cannot be part of a system that has been adequately demonstrated today or is achievable given such sites are merely hypothetical. *E.g.*, CI0770 (NRECA Comments 12). Indeed, EPA admits significant study will be required to determine whether these storage sites can ever be used for sequestration, and if so, how much CO_2 they might ultimately store. CI8244 (89 Fed. Reg. at 39,855 n.378).

How can this massive storage infrastructure possibly develop by 2032? EPA's explanation is long on optimism and short on record support.

EPA notes that from 2021 to 2023 the number of permit applications for injection wells for long-term CO_2 storage (known as Class VI wells[14]) increased tenfold. CI8244 (*Id.* at 39,870). Unfortunately, EPA's permitting resources have not kept up. EPA has 130 applications under review but has issued only *eight permits* ever. CI8244 (*Id.*) EPA claims it "is devoting increased resources to the Class VI program" and "expect[s] that the additional resources . . . will lead to increased efficiencies." CI8244 (*Id.*)

But EPA's expectations do not reflect reality. For Project Tundra for example, "four years were required" just for permitting the storage site. CI0632 (Minnkota Comments 16). Yet the Rule budgets just half that. CI8244 (89 Fed. Reg. at 39,875). EPA's unsubstantiated "expectations" are indistinguishable from the "mere speculation or conjecture" this Court has held impermissible under Section 7411. *Lignite*, 198 F.3d at 934.

[14] Class VI wells are the type of wells used for long-term geologic CO_2 storage. CI8244 (89 Fed. Reg. at 39,864 & n.473). EPA permits these wells under the Underground Injection Control program of the Safe Drinking Water Act. CI8244 (*Id.* at 39,866).

Even assuming all those potential sites prove suitable, EPA does not explain how sufficient capacity to store 90% of total CO_2 emissions from all regulated facilities could possibly develop by 2032. EPA does not—and cannot—deny the current storage capacity is not even a tenth of what the Rule requires. *See* CI0660 (Ameren Comments 56-57) (infographic illustrating "current U.S. CO_2 storage capacity" is less than 10% of "estimated CO_2 output" under the Rule (capitalization adjusted)); *see also* CI0772 (EEI Comments App'x 24-25 & n.61) (similar). Instead, EPA once again turns to unsupported optimism to bridge the gap. EPA says "commercial geologic sequestration capacity is growing in the United States" and "[m]ultiple commercial sequestration facilities . . . are in construction or advanced development." CI8244 (89 Fed. Reg. at 39,871). But the fact that overall capacity is "growing" and facilities are "in construction or advanced development" hardly satisfies the statutory requirements that the BSER under Section 7411 already "has been adequately demonstrated" and the emission limit is "achievable."[15]

[15] Significant issues also exist relating to pore space property rights. For example, Petitioner North Dakota—a strong proponent of developing CCS—attempted to clarify property rights relating to pore space ownership only for it to be declared an unconstitutional taking. *See Nw.*

There is no basis for concluding industry can overcome the numerous and substantial obstacles to develop this capacity by 2032. EPA's insistence on a BSER and standard of performance that relies on non-existent, yet necessary, storage contravenes Section 7411's text and is arbitrary and capricious.

Timeline. As principal support for providing a seven-and-a-half-year implementation timeline for all three pieces of the mandated CCS system, EPA cites a report illustrating a "baseline project schedule for the CO_2 capture plant"—*i.e.*, the schedule for installing and deploying CCS at a hypothetical coal plant. CI8244 (89 Fed. Reg. at 39,874) (citing CI9095 (Sargent & Lundy Report Att. 17)); *see also* CI8244 (*Id.* at 39,938).

But EPA cannot reasonably extrapolate from a single *hypothetical* facility's construction timeline to conclude that the facilities subject to the 90% CCS mandate could also do so in the same timeframe. The surge in demand for equipment and labor from the Rule, and the resulting strain on permitting resources, are just a few of the reasons. *See* CI8182

Landowners Ass'n v. State, 978 N.W.2d 679 (N.D. 2022). EPA offers no explanation for how a new category of property law can be expected to emerge across many States in a few short years to facilitate a rapid expansion of carbon storage.

(EEI Supplemental Comments 16) (explaining how heightened demand and supply chain challenges have extended timeframes to obtain certain components); CI8182 (*Id.* at 31) ("[D]evelopers of [CO_2 pipelines] have cited permitting challenges as the rationale for their decisions to delay, withdraw, or cancel."); CI0770 (NRECA Comments 23) (noting Sargent & Lundy Report ignores transport and storage).

EPA's reliance on hypothetical construction timelines is even more jarring because Project Tundra—the closest thing to an actual CCS retrofit project—has taken a decade just to be in a position to possibly *begin* construction. CI0632 (Minnkota Comments 16).

It took Minnkota four years just to obtain the necessary geologic information, complete its Class VI permit application, and hold hearings—and this was in a State with primacy to issue Class VI permits, which only three States have. CI0548 (Otter Tail Comments 28). Further, Minnkota did not have to go through a lengthy siting and routing process for a transport pipeline connecting capture to storage because the project could store the separated CO_2 onsite and required only a quarter-mile pipeline. CI0548 (*Id.* at 28-29). Minnkota estimates an additional 18-

month permitting process would have been required if a longer pipeline had been needed. CI0548 (*Id.* at 29).

Minnkota has also been studying the project and working on front-end engineering and design studies since 2015 to "do things such as study the flue gas characteristics of the plant (which is necessary to ensure solvent performance)." *Id.* During the comment period on the Proposed Rule, the air permit for the project was still pending. *Id.* Once all the permits are obtained and engineering studies completed, "the construction timeline is three to four years and requires significant advance planning." *Id.* Even though Minnkota began work on Project Tundra in 2015, it expressed uncertainty in comments about whether it could meet the Proposed Rule's 2030 deadline, adding that, "[f]or those owners and operators who have not yet begun the process or who need to construct lengthy pipelines, this is an impossible task." *Id.*

Moreover, the report EPA relies on admits it "does not consider the timeline or requirements associated with transporting and sequestering the CO_2 that is ultimately captured" and yet emphasizes that "these other infrastructure aspects of the CCS value chain are critical to the feasibility and timeline of implementing a CCS project." CI9095 (GHG

Mitigation Measures-Steam TSD, Att. 17 at 2); CI0770 (NRECA Construction Timeframes 6) (contrasting EPA's hypothetical project with data from actual projects). In other words, even the hypothetical single-facility timeline on which EPA relies evaluates the lead time for only *one part* of the CCS system—capture. As discussed above, the transport and storage aspects of CCS present heightened timing challenges.

In response, EPA points to a "Transport and Storage Timeline Summary" that purportedly represents "a review of the available information for installation of CO_2 pipelines and sequestration sites." CI8244 (89 Fed. Reg. at 39,874). That summary is a chart that assumes that *no* federal land will be required (because that could add 18 months) and that the pipeline does not "cross multiple states" (because that "may also take longer to permit"). CI9095 (GHG Mitigation Measures-Steam TSD, Att. 2 n.4). Those best-case-scenario assumptions only further demonstrate conclusively EPA's failure to account for *all* adverse conditions. *See West Virginia*, 597 U.S. at 701; *Nat'l Lime Ass'n*, 627 F.2d at 431 n.46, 433; *Sierra Club*, 657 F.2d at 377.

Compounding the unachievability of the Rule's timelines is the fact that "EPA d[id] not assume that CCS projects are, in general, subject to

[the National Environmental Policy Act]." CI8244 (89 Fed. Reg. at 39,875). But many CCS projects cannot escape that act's review and its accompanying delays. Review is required for "sources receiving federal funding," "projects on federal lands," or where a federal permit is necessary "for construction of the pipeline . . . or for sequestration." *Id.* And, according to EPA, "if one aspect of a project is subject to [review], then the other project components could be as well." *Id.* Review requires agencies "take a 'hard look' at the environmental consequences before taking a major action," *Baltimore Gas & Electric Co. v. NRDC*, 462 U.S. 87, 97 (1983) (citation omitted), and "averages more than four years," CI0770 (NRECA Comments 23). EPA cannot just "assume" those delays away. *Contra* CI8244 (89 Fed. Reg. at 39,875).

At bottom, EPA's seven-and-a-half-year timeline is built on best-case scenarios, indefensible assumptions, and rank speculation—all of which is unlawful. EPA's example may support the proposition that, if everything goes perfectly, some facilities somewhere may be able to meet that timeline, possibly. But it has not shown that the vast majority of the facilities can do so. § 7411(a)(1). Instead, EPA impermissibly "ignore[d]" the statutory standard and "'important aspect[s] of the problem.'" *Ohio*,

144 S. Ct. at 2053 (quoting *State Farm*, 463 U.S. at 43). Therefore, EPA's timeframe for CCS exceeds its statutory authority and is arbitrary and capricious even if its other determinations regarding 90% CCS as the BSER could somehow survive review.

* * *

At a minimum, Section 7411 requires regulated entities be able to implement a BSER and achieve the mandated standard of performance in the time allotted. Here, they cannot. No one anywhere has implemented CCS to achieve the consistent, annual, facility-wide 90%-CO_2-capture rate the Rule requires. Additionally, serious obstacles exist to many regulated entities achieving any type of CCS system—including transportation and storage—especially on the Rule's less-than-eight-year timeline. EPA brushes away these insurmountable hurdles. That series of impermissible agency actions mandates vacatur.

B. EPA failed to account for the full cost of its chosen system.

Even if EPA's chosen system had physically "been adequately demonstrated," the prohibitive "cost" of CCS would still doom the Rule. § 7411(a)(1). To get around this problem, the agency contended the enormous subsidies Congress recently provided in the form of CCS tax

credits have substantially cut the technology's exorbitant costs. But far from *reducing* the costs of the Rule, such legislative largesse merely *shifts* those costs onto taxpayers. The Act requires EPA to "account" for the true "cost of achieving" the Rule's performance standards; EPA cannot simply blind itself to tens or hundreds of billions in costs just because it will be borne by other parties. *Id.* On this front too, the Rule hinges on a legally flawed construction of the statute.

1. As EPA has long admitted, CCS is prohibitively costly.

In establishing standards of performance and the emission reduction associated with the BSER, EPA must "tak[e] into account the cost of achieving such reduction." *Id*. As both this Court and the agency have long understood, this means it cannot require measures that come at an "'excessive' or 'unreasonable' cost." CI8244 (89 Fed. Reg. at 39,832) (quoting *Sierra Club*, 657 F.2d at 343)); *see also West Virginia*, 597 U.S. at 729 (discussing EPA's understanding that it cannot require "exorbitantly costly" steps; *Portland Cement Ass'n v. Train*, 513 F.2d 506, 508 (D.C. Cir. 1975) (approving EPA's view that there cannot be "a gross disproportion between achievable reduction in emission and cost of the control technique"). Instead, EPA must ask whether "the costs" of a

technology "are considered to be reasonable as a general matter across the fleet of existing sources." 84 Fed. Reg. at 32,541.

Even in the absence of a specific statutory mandate to consider cost such as that in Section 7411, the default rule is that an agency "must consider cost," because "reasonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions." *Michigan v. EPA*, 576 U.S. 743, 753, 759 (2015) (emphasis in original). Indeed, unless Congress takes cost off the table, which it has not done here, it would not be "reasoned decisionmaking" to ignore such a critical factor. *Id.* at 750 (quotation marks omitted); *cf. Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 465 (2001) (addressing different provision of the Act where Congress "does not permit the EPA to consider costs").

Section 7411's explicit directive to account for "the cost" of cutting emissions therefore only underscores the seriousness of that endeavor. And it means that some emission reductions are off limits, as it would not be "rational" for EPA "to impose billions of dollars in economic costs," for instance, "in return for a few dollars in . . . environmental benefits." *Michigan*, 576 U.S. at 752. Instead, as the agency told the Supreme Court two years ago, it can only mandate measures "of reasonable 'cost.'" EPA

Br. 44, *West Virginia v. EPA*, Nos. 20-1530 et al. (S. Ct. Jan. 18, 2022) (quoting § 7411(a)(1)) ("2022 EPA Br."). That is why EPA acknowledged it could not use Section 7411(d) to, for example, reduce the operations of disfavored plants to "two hours per day," "cancel coal entirely," or require "the installation of solar panels on tens of millions of homes." *Id.* at 41-42, 44; *see West Virginia*, 597 U.S. at 759 n.1 (Kagan, J., dissenting) (claiming the cost constraint, among others, has "had real effect" at the agency, causing "EPA in prior rulemakings to exclude a number of pollution-control measures" from available options).

Applying that principle, EPA consistently rejected CCS as too costly in the past. In the Clean Power Plan, for instance, it rejected CCS on the ground that it would be "substantially more expensive" than even its multibillion-dollar generation-shifting scheme. 80 Fed. Reg. at 64,769. As EPA explained, "the scale of infrastructure required to directly mitigate CO_2 emissions from existing [plants] through CCS can be quite large and difficult to integrate into the existing fossil fuel infrastructure." *Id.* at 64,690. Moreover, requiring "CCS (or even partial CCS)" for existing plants "would most certainly have [a] . . . significant effect on nationwide electricity prices and could affect the reliability of the supply of

electricity," meaning EPA could "not find . . . the cost to implement" this system "to be reasonable." EPA, GHG Abatement Measures TSD for Proposed Clean Power Plan 7-5 to 7-6 (June 10, 2014), https://tinyurl.com/43arp9sn. In short, the "costs" of mandating "CCS retrofits" were "too high." 80 Fed. Reg. at 64,751.

Four years later, the agency's assessment remained unchanged. In the Affordable Clean Energy Rule, EPA confirmed "the high cost of CCS, including the high capital costs of purchasing and installing CCS technology and the high costs of operating it, . . . prevent CCS or partial CCS from qualifying" as a permissible system under Section 7411. 84 Fed. Reg. at 32,548. Indeed, the "exorbitant" costs of CCS technologies "would almost certainly force the closure of the coal-fired power plants that would be required to install them." *Id.* Thus, "a rule requiring the use of carbon-capture technology would have shifted far more electricity production from coal-fired plants than the Clean Power Plan would have"—by shutting coal plants across the board. *West Virginia*, 597 U.S. at 773 n.5 (Kagan, J., dissenting).

2. EPA obscured the Rule's true costs by claiming costs to the taxpayer can be wholly ignored.

While acknowledging its prior findings that "CCS did not qualify" as a permissible system "due to cost considerations," the agency insisted in the Rule that the introduction of "higher tax credits" under the 2022 Inflation Reduction Act "significantly improves the cost reasonableness of CCS for purposes" of Section 7411. CI8244 (89 Fed. Reg. at 39,882). That statute "extended and significantly increased the tax credit" for CO_2 captured and stored "from $50/metric ton to $85/metric ton," thereby providing "a significant stream of revenue for sequestered CO_2 emissions." CI8244 (*Id.* at 39,800, 39,882).

While the total amount of these credits will depend on how much CCS is used in the future, estimates collected by the Congressional Budget Office range from "about $5 billion over the 2023-2027 period" to "anywhere from $30 billion to well over $100 billion" "by the early 2030s." CBO, *Carbon Capture and Storage in the United States* 17 (Dec. 13, 2023), https://www.cbo.gov/publication/59832 ("CBO Study"). In EPA's view, these massive sums qualify as "significant reductions in the cost of implementing CCS." CI8244 (89 Fed. Reg. at 39,814).

But as a matter of basic economics, these billions of dollars in tax credits do not *cut* the costs of EPA's carbon-capture mandate; they *transfer them*—from power plant owners to taxpayers. "When the Government grants exemptions or allows deductions all taxpayers are affected," because conferring such benefits forces the non-exempt to become "indirect and vicarious 'donors'" of the favored class. *Bob Jones Univ. v. United States*, 461 U.S. 574, 591 (1983). That is why "tax credits" are treated as "'tax-expenditures'"—costs the President must include in his annual budget to Congress—because they "reduce amounts available to the treasury." *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 343 (2006); *see* 2 U.S.C. § 632(e)(2)(E); 31 U.S.C. § 1105(a)(16). And that is further why the Congressional Budget Office measures the effect of the Inflation Reduction Act's tax credits as a "loss" or "reduc[tion]" to the public fisc. CBO Study 17.

EPA thus transparently erred by treating "billions of dollars in spending each year" as an unalloyed benefit. *King v. Burwell*, 576 U.S. 473, 485 (2015). It is plainly not "taking into account the cost of achieving [an emission] reduction" to write off billions from that expense on the theory that taxpayers will foot the bill. § 7411(a)(1). By "fail[ing] to

consider an important aspect of the problem" before it, EPA did not even satisfy the bedrock requirement of "reasoned decisionmaking." *Michigan*, 576 U.S. at 750, 752; *see also Ohio*, 144 S. Ct. at 2054 (staying EPA action because agency "ignored" an important consideration).

3. EPA's defenses of its cost analysis are meritless.

EPA's analysis of this critical issue consisted of a terse paragraph in the Response to Comments. CI8914 (RTC Chap. 2 at 129). None of the agency's defenses of its accounting chicanery withstands scrutiny.

a. EPA suggested it had to consider only "the cost *to the source*" in mandating CCS, such that the burdens on "the taxpayer" were irrelevant. *Id.* (emphasis added); *see* CI8244 (89 Fed. Reg. at 39,889) ("It is reasonable to account for the [Internal Revenue Code] section 45Q tax credit because the costs that should be accounted for are the costs to the source."). But one will search Section 7411 in vain for any such qualification. Congress required EPA to "tak[e] into account *the cost* of achieving" the chosen emission "reduction"—period—with no limit based on *who bears* that cost. § 7411(a)(1) (emphasis added).

Moreover, EPA's proposed qualification would often render meaningless Congress's directive to EPA to account for the cost

associated with an emission limitation. For example, regulated electric generators would almost never have costs associated with a performance standard because generators typically pass costs on to customers. Other industries also pass costs on to consumers through increased prices of their products. EPA's reading thus violates the "cardinal principle of statutory construction that [courts] must give effect, if possible, to every clause and word of a statute." *Williams v. Taylor*, 529 U.S. 362, 404 (2000) (internal quotation marks omitted).

By contrast, when Congress wishes to limit the types of costs EPA must consider, it knows how to do so. For example, Congress directed certain officials to "take into account[] the final cost *to the consumer*" of prohibiting certain "major fuel burning stationary source[s] . . . from using fuels other than locally or regionally available coal." § 7425(b)(3) (emphasis added). In another, Congress called for "consideration" of the "*capital cost* of the technological system or systems being used." § 7411(j)(D)(i)b)(3) (emphasis added). Section 7411(a)(1)'s "cost" requirement contains no such restriction, and this Court cannot "infer in certain provisions" of the Clean Air Act "limitations that ha[ve] been expressly imposed elsewhere." *Whitman*, 531 U.S. at 468. That may

explain why this Court considers the "costs" of Section 7411 standards to both "utilities" and "[c]onsumers" alike. *Sierra Club*, 657 F.2d at 314.

No one reasonably maintains that EPA's consideration of the *other* Section 7411(a)(1) factors—"nonair quality health and environmental impact and energy requirements"—should be artificially cabined. EPA has never explained why "cost" should be singled out for a different approach. Try as it might, EPA cannot engage in "interpretive gerrymanders under which [it] keeps parts of statutory context it likes while throwing away parts it does not." *Michigan*, 576 U.S. at 754.

For what it is worth, even EPA does not believe Section 7411(a)(1) permits such a limited cost analysis. The Rule elsewhere asserts that "the costs to the regulated facility" are "*the most relevant* costs"—not the *only* ones. CI8244 (89 Fed. Reg. at 39,801) (emphasis added). EPA also told the Supreme Court just two years ago that, in light of Section 7411(a)(1)'s "cost" requirement, it could not adopt emission limits that "would be exorbitantly costly *for ratepayers*," who are distinct from *sources*. 2022 EPA Br. 42 (emphasis added); *see West Virginia*, 597 U.S. at 729 (understanding EPA to claim—erroneously—the power to decide "how

high energy prices can go . . . before they become unreasonably 'exorbitant'").

Meanwhile, limiting Section 7411(a)'s cost analysis to the burdens borne solely by sources would neuter that statutory requirement. Under that approach, "Congress could pass a law subsidizing" the achievement of an emission limit that "cost more than $2 trillion every year," thereby "increasing the overall federal budget by half," yet EPA could "say that the costs of such a standard are 'zero.'" CI0435 (Heritage Foundation Comments 15). That cannot be right.

Regardless, EPA did not even fully account for the cost of the Rule to the sources themselves. Taxes may be as certain as death, but tax credits are not. As the agency acknowledged, these credits will "expir[e]" after 12 years, which could "significantly affect the costs to" coal plants, and "lead to reductions in the amount of their generation." CI8244 (89 Fed. Reg. at 39,902). Indeed, that is one reason why the Affordable Clean Energy Rule declined to rely on the pre-Inflation Reduction Act tax credits for CCS: because they were "limited in time," the credits "would not be available to offset much of the capital costs of the CCS systems that are recovered over a 30-year period." 84 Fed. Reg. at 32,548, 32,549.

Faced with this problem, EPA speculated power plants "may well be able to replace" the wealth transfers from the tax credits through "the sale of CO_2" they capture, and that in any event, it would consider "revis[ing]" the Rule by the early 2040s. CI8244 (89 Fed. Reg. at 39,902). But that just gives the game away: If the Rule's costs are so burdensome that they cannot be maintained *in the future* in the absence of federal subsidies (or a speculative market for CO_2), it is unreasonable to impose them *now*. Put differently, once these tax accounting tricks fade away, it becomes clear the costs of CCS are not "economic[ally] viab[le]" today. *Id.*; *see* 84 Fed. Reg. at 32,548 (observing that because of "high costs of CCS," pre-Inflation Reduction Act "tax credits" were "essential to the commercial viability" of Petra Nova). All this underscores that EPA's reliance on the tax credits is no more than budgetary prestidigitation designed to obscure the Rule's true objective—use "the 'exorbitant' costs" of CCS to "'force the closure' of all affected 'coal-fired power plants.'" *West Virginia*, 597 U.S. at 776 (Kagan, J., dissenting).

b. EPA also invoked a "Floor Statement" from a single legislator—Representative Pallone—as justification for using the tax credits to reduce the Rule's costs. CI8914 (RTC Chap. 2 at 129). According to EPA,

this "legislative history . . . makes clear that Congress was well aware" that the agency could base a Section 7411(d) rulemaking on the "utility of the tax credit in reducing the costs of . . . CCS." CI8244 (89 Fed. Reg. at 39,881). "But legislative history is not the law." *Azar v. Allina Health Servs.*, 587 U.S. 566, 579 (2019) (internal quotation marks omitted). And even those who are willing to "make use of legislative history" to illuminate ambiguous text agree that "floor statements by individual legislators rank among [its] least illuminating forms." *NLRB v. SW Gen., Inc.*, 580 U.S. 288, 307 (2017). The stray statement EPA sifted from the legislative record cannot cabin Section 7411(a)(1)'s clear mandate to consider the entire "cost" of an emission limit.

Plus, "even those lowly sources speak at best indirectly to the precise question here." *Advoc. Health Care Network v. Stapleton*, 581 U.S. 468, 481 (2017). While Rep. Pallone opined that "EPA may consider the impact of the . . . tax credits in lowering the costs of [CCS]" to the sources, 168 Cong. Rec. E879 (Aug. 26, 2022), that assertion does not explain *how* the agency is to account for the concomitant increase in costs to the taxpayer (or for the fact that the credits expire). So even if one treats this

legislator's statement as authoritative, EPA is still in the same position as it was before. It failed to consider the full array of costs.

c. Finally, and perhaps most incredibly, EPA suggested "the taxpayer" may ultimately not have to "pay the cost" of the tax credits because the federal government could "fund" these massive subsidies through "borrowing." CI8914 (RTC Chap. 2 at 129). This is akin to a child thinking a toy is free because a credit card rather than cash is used to purchase it. Just as costs do not disappear when they are shifted to taxpayers, they do not disappear when they are shifted to *future* taxpayers. Increasing the national debt by potentially over $100 billion is not a cost-free proposition. Interest must be paid on that massive loan, and some taxpayers must eventually repay the loan itself, making debt very much a "cost of achieving" the agency's desired emission "reduction." § 7411(a)(1). That the agency believes such borrowing eliminates cost only highlights its deficient analysis. While EPA can take certain steps to protect trees, it cannot pretend money grows on them.

* * *

To avoid having to account for the unsustainable costs of its chosen system, EPA had to replace the statutory phrase "taking into account the

cost" with "taking into account the *net* cost *to the source*" and pretend that the (short-term) availability of tax credits somehow means that no one will ever have to pay the piper. In doing so, EPA cast aside both the statutory text and its duty to engage in reasoned decisionmaking.

C. EPA failed to account for energy requirements by not adequately addressing reliability concerns.

The Clean Air Act requires EPA to "tak[e] into account . . . energy requirements" when identifying a BSER. § 7411(a)(1). EPA must weigh the "impacts in the broadest sense at the national and regional levels and over time" in order to find "the best balance of economic, environmental, energy considerations" on a "grand scale." *Sierra Club*, 657 F.2d at 330. Accordingly, whether EPA's selected BSER will force so many retirements as to threaten reliability of the bulk power system is a relevant fact EPA must consider in exercising its Section 7411 authority. *See Michigan*, 576 U.S. at 753 (requiring consideration of all "the advantages and the disadvantages"); *State Farm*, 463 U.S. at 43 (EPA may not ignore an "important aspect of the problem before it."). However, EPA did not adequately carry out its statutory responsibility to consider the risk of its actions to the nation's energy requirements when promulgating the Rule.

Commenters told EPA repeatedly that the Rule will undermine grid reliability at a time when the nation's electricity demands are skyrocketing and the resources needed to serve those demands are becoming increasingly vulnerable. EPA's response amounted to little more than lip service and a few band-aids that fall far short of the agency's statutory obligations.

1. The Rule will undermine the electric grid.

EPA designed the Rule to force the retirement of dispatchable sources of generation—namely fuel-secure coal plants—and constrain the ability to replace those dispatchable resources. As discussed above, for most coal-fired units, the only feasible compliance option will be shutting down operations before January 1, 2032. *Supra* Section I.A. Plans for new facilities that cannot satisfy EPA's unachievable mandates will also be abandoned. These forced changes to the sector will jeopardize the reliability of the Nation's electricity system.

States, grid operators, and the power sector all submitted comment letters warning EPA of impending grid reliability issues that would occur if EPA adopted the Rule. Electric generators alerted EPA that the "combination of premature retirements from coal units and (arbitrarily)

low capacity factors from natural gas units will exacerbate the reliability issues." CI0770 (NRECA Comments 24). The States warned "that grid reliability is especially fragile" due to increasing demands from a growing population, an increasingly electrified society, and new heavy-load electricity consumers like data centers or cryptocurrency mining. *See* CI0798 (West Virginia, et al. Comments at 4). Several of the Nation's grid operators warned EPA that the Proposed Rule "would greatly exacerbate an ongoing loss of critical, dispatchable generating capacity that is needed to ensure grid reliability." CI0673 (Joint Comments of Electric Reliability Council of Texas, Inc, Midcontinent Independent System Operator, Inc., PJM Interconnection, L.L.C., and Southwest Power Pool, Inc. ("Joint ISOs/RTOs Comments") 5); *accord* CI0670 (SPP Comments 8) (The Rule "will jeopardize, through accelerated retirement or reduced output, [Southwest Power Pool]'s ability to utilize [fossil fuel facilities] until such time as adequate alternatives are available."); CI0623 (MISO Comments 2) (warning about "the risk of a looming [energy] shortfall" caused by the Rule). The Federal Energy Regulatory Commission ("FERC") held a panel on the reliability impacts of the Rule, where multiple experts addressed the Rule's unachievable standards and

timelines, while raising alarms about the pace of retirements and maintaining reliability in the face of surging power demand and challenges in transmission and infrastructure buildouts. *See generally* CI9090 (FERC Annual Reliability Technical Conference Transcript Docket No. AD23-0-000).

Commenters also noted how the reliability concerns identified are amplified by the combined effect of the entire suite of regulatory actions under the agency's coordinated, multi-media "power plant strategy." CI0673 (Joint ISO/RTO Comments 5). Grid operators warned that the Rule "when combined with other EPA rules and other policy actions, could well exacerbate the disturbing trend and growing risk wherein the pace of retirements of generation with attributes needed to ensure grid reliability is rapidly exceeding the commercialization of new resources capable of providing those reliability attributes." CI0673 (Joint ISO/RTO Comments 1); CI8175 (America's Power Comments 4-7); CI0695 (NMA Comment 72-81); CI0670 (SPP Comments 4) (discussing the "likelihood that the . . . Rule's requirements would exacerbate an issue that is already upon us."). Each MW of power lost to shutdowns or canceled projects must be made up for by some new generation. *E.g.*, CI0670 (SPP

Comments 6-7). Otherwise, the electric grid would collapse. *See* CI0896 (EKPC Comments 12-13).

With the electric grid in such a precarious position, fossil fuels are crucial to maintaining its reliability. Specifically, both coal and natural gas facilities are essential to maintaining reliability, especially when weather conditions do not allow renewables to generate electricity. CI8195 (NMA Supplemental Comments 17, 23). The early retirements of reliable power sources forced by the Rule will destabilize the grids. Less reliable electricity sources also make communities increasingly vulnerable to "massive rolling blackouts." CI0679 (LEC Att. 2, 42); CI0695 (NMA Comments 70-71).

That concern is exacerbated by the constraints EPA has simultaneously imposed on the construction of new dispatchable generation resources to take the place of retired facilities. The Rule imposes unachievable standards on all new gas-fired facilities except those willing to hold back operations to no more than 40% of capacity. CI0798 (West Virginia, et al. Comments 49). Such severely limited new resources cannot possibly fill the gap that will be left via early retirement of coal-fired plants. Grid operators have confirmed as much. *See also, e.g.*,

CI0673 (Joint RTO/ISO Comments 16). ("[T]he Rule may force the premature retirement of those imminent and near-term dispatchable units prior to the commercialization of replacement generation with similar attributes or capabilities to provide grid services.").

None of this was really news to EPA: its own modeling projects most regulated facilities will retire instead of attempting 90% CCS. CI8913 (Regulatory Impact Analysis 3-25 to 3-28). Information from the U.S. Energy Information Administration confirms that ominous result, predicting that EPA's Rule will force 155,000 MW of coal-fired retirements *by 2032*. CI8195 (NMA Supplemental Comments 3). Accordingly, the Rule's negative impact on fossil fuel-fired base load generation is undisputed.

2. EPA failed to adequately address reliability concerns.

The enormous displacement of resources that will be caused by the Rule, which EPA's own modeling confirms, should have caused EPA to undertake a robust analysis of the reliability impacts of its actions. *Michigan*, 576 U.S. at 753; *State Farm*, 463 U.S. at 43; Ohio, 144 S. Ct. at 2053-54 (agency must offer "a satisfactory explanation for its action"

and demonstrating "awareness is not itself an explanation"). That is not what EPA did.

Instead of recognizing and responding to the dangerous trends its actions have caused, EPA reinforced them with the Rule. CI8195 (NMA Supplemental Comments 4, n.9) (highlighting remarks by EPA confirming intent to reinforce trends in the power sector through multiple rules). EPA also refused to conduct a cumulative impact analysis of its "power sector strategy" rules, ignoring its statutory obligation to fully understand the problem. While EPA agreed that "reliability of the . . . power system is of paramount importance," CI8244 (89 Fed. Reg. at 40,013), it made no substantive changes to cure the reliability problems associated with an unachievable standard and the resulting forced premature retirement of baseload generation. EPA unconvincingly tries to find cover through its woefully inadequate stakeholder consultation, stating it had "engaged with the balancing authorities that submitted comments to the docket, the staff and Commissioners of the Federal Energy Regulatory Commission, DOE, the North American Electric Reliability Corporation, and other expert entities during the course of this rulemaking." CI8244 (*Id.* at 39,803).

And, based on those meetings, EPA concluded the Rule posed no threat to grid reliability. CI8244 (*Id.* at 39,886, 40,013). But meeting with representatives differs from addressing adequately many substantial, evidence-based grid reliability concerns that stakeholders raised in the administrative record.

Rather than recognizing the hugely negative effect warned of by regulators and industry, EPA trots out several theories as to why it believes the reliability concerns expressed by so many are not real. None hold together. EPA first claims the Rule will have "limited and non-adverse impacts on the long-term structure of the power sector or on the reliability of the power sector." CI8244 (89 Fed. Reg. at 39,886). Its basis for this conclusion is that CCS is viable for power plants. *Id.* But as explained above, *see* Section I.A, CCS is not an option for many facilities. Even for plants that can adopt CCS (assuming that full-stream 90% annual capture is possible of any plant), electricity demand is increasing at a rate that requires immediate action to manage the Rule's impact. And it will take years before any CCS-controlled energy is produced. Similarly, EPA claims that it has allowed sufficient time to comply. But EPA's timelines are based on hazy and unproven assumptions. CI8244

(89 Fed. Reg. at 39,862) (pipeline construction); CI8244 (89 Fed. Reg. at 39,875) (CO2 capture); CI8244 (89 Fed. Reg. at 39,938-39) (base load natural gas). And EPA's confidence in the ability of facilities to implement CCS is belied by its own modeling showing massive early retirements and the severe constraints on new generation. CI8913 (Regulatory Impact Analysis 3-25 to 3-28).

Perhaps recognizing that it ignored the advice of experts and failed to adequately address reliability concerns, the only action EPA took in response to the many concerns regarding reliability was to craft a few new "compliance flexibilities" for States and sources seeking to comply with the Rule. *See* CI8244 (89 Fed. Reg. at 40,013-40,020). EPA claims to have solved any reliability problems by allowing "reliability-specific adjustments" to State plans, *see* CI8244 (89 Fed. Reg. at 40,014), and permitting extensions when "unforeseen reasons" force plants to "temporarily remain online to support reliability," CI8244 (89 Fed. Reg. at 40,017). But such limited exceptions are not enough for EPA to sidestep its duty to set standards that account for energy requirements in the first instance—unlawful standards cannot be salvaged by directing regulated parties to seek vague discretionary dispensations. *See*, *e.g.*,

Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 326-27 (2014). More importantly, those "compliance flexibilities" offer only inadequate relief because they do not address the root cause of the problem—the unachievability of EPA's standards. As long as EPA's standards remain unachievable, plants will not even attempt to comply, and no amount of "compliance flexibility" will do the trick. Plants that no longer exist cannot request the minimal relief EPA offers; once retired, those resources are gone, along with the services they provided to ensure reliability of the grid.

3. EPA's reliance on its own model to dismiss reliability concerns was flawed and renders the Rule arbitrary and capricious.

Notwithstanding the many comments raising reliability alarms, EPA claimed in the Rule that all is well, principally because it conducted its own modeling of the power sector. CI8244 (89 Fed. Reg. at 39,803). But as EPA itself concedes, its analysis was incomplete, assessing just one component of grid reliability to the exclusion of other key elements.

As FERC clarifies in the "Reliability Explainer" EPA cites in its analysis, grid reliability is "the provision of an adequate, secure, and stable flow of electricity as consumers may need it. In other words, when

you flip the light switch, the lights turn on." FERC, *Reliability Explainer* (last updated Aug. 16, 2023)[16]; *see* CI8916 (TSD – Resource Adequacy 1 n.4 (citing *id.*)). As EPA itself acknowledges, resource adequacy—that is, the "provision for adequate generating resources to meet projected load and generating reserve requirements in a power region"—is just one "aspect of grid reliability." CI8916 (TSD – Resource Adequacy 1 & n.4). Nevertheless, EPA's modeling *only* considered resource adequacy, rather than operational or other aspects of grid reliability, to determine the Rule's impact on reliability. CI8916 (TSD – Resource Adequacy 4) ("we have analyzed whether the projected effects of the rules would in this regard pose a risk to resource adequacy"). EPA took this tack despite numerous comments explaining the important difference between "reliability" and "resource adequacy." CI0673 (Joint RTO/ISO Comments 6-7); CI0770 (NRECA Comments 21, 26) ("resource adequacy is different from reliability"). EPA's deficient analysis of such a critical issue exemplifies why state regulators have "the greatest knowledge regarding questions of grid reliability" in their States, while power-grid-related

[16] Available at https://www.ferc.gov/reliability-explainer.

issues lie outside EPA's expertise. *See Texas v. EPA*, 829 F.3d 405, 433 (5th Cir. 2016).

EPA tries to compensate for its inadequate modeling by referencing various studies. CI8244 (89 Fed. Reg. at 39,971) ("[EPA] analyzed potential impacts of the BSERs on resource adequacy in addition to considering multiple studies on how reliability could be impacted by these emission guidelines."); *see* CI8916 (TSD – Resource Adequacy 2-3). This effort is wholly inadequate. Not only do the generic studies that EPA cites not address how the Rule will impact resource adequacy or reliability, *see* CI0770 (NRECA Comments 27), the agency's discussion further demonstrates how EPA conflates these critically distinct issues, CI8916 (TSD – Resource Adequacy 2) ("These two studies demonstrate how even higher levels of renewables can be part of a grid that maintains resource adequacy."). And while the agency claims that the future electricity supply projected in its Integrated Planning Model ("IPM") reference case "is projected to be adequate and reliable," it fails to articulate the basis of this "projection," which directly conflicts with many warnings about the increasing risks to resource adequacy and grid reliability. CI8916 (TSD – Resource Adequacy 4).

Commenters alerted EPA that this type of model is unsuited to address the various regional grids' ability to respond to changes caused by the Rule. CI0770 (NRECA Comments 26-27) (criticizing EPA for not using appropriate tools to evaluate reliability); *see* CI8649 (DOE Power Sector Modeling 22, 24). The many limitations of EPA's IPM model to evaluate, much less address, reliability concerns, were clearly identified in comments. CI0695 (NMA Comments 66-72). EPA ignored them. Without knowing the reliability consequences of dispatchable resource retirements, it is impossible for EPA to make any credible claims regarding the reliability impacts of the Rule.

EPA was required to do better. Indeed, in comments submitted on the proposed rule, there was a reliability analysis prepared by Quanta Technology evaluating the reliability of the PJM grid based on assumptions regarding the premature retirement of coal and gas electric generating units due to EPA rules and other policies. *See generally* CI8175 (America's Power Supplemental Comments 5-6 and Att. 1). The Quanta analysis, which forecast violations of well-established reliability standards, was a more comprehensive reliability analysis than EPA's flawed IPM analysis and typifies the kind of reliability analysis that EPA

should have conducted to determine whether the Rule might threaten reliability. *Id.*

Even EPA's own "resource adequacy" analysis was deeply flawed. According to EPA, the IPM is "designed to ensure resource adequacy." CI8916 (TSD – Resource Adequacy 6). The model projects resource adequacy in the future "either by using existing resources or through the construction of new resources." *Id.* In other words, the model adds enough new hypothetical resources in the future to guarantee resource adequacy. This means the model EPA uses will *never* project a resource adequacy problem. Moreover, there is no assurance that the hypothetical resources that are created within EPA's model will ever be built in the real world.

EPA's assumptions are also hopelessly flawed. For example, EPA's accreditations—its assumptions about how energy resources will actually perform—bear no resemblance to how grid operators and FERC plan for energy resource requirements. Accreditations are represented as a percentage of "nameplate capacity," the resource's theoretical maximum performance. CI0710 (PGen Comments, Att. M 9) (explaining compounded flaws in EPA's Integrated Planning Model)). No resource can have a 100% accreditation for reasons including routine maintenance

and downtime, making the accreditation assumptions in EPA's modeling both bewildering and indefensible. For example, in the SPP region, EPA assumes new solar resources will produce electricity 100% of the year in 2028 and 2030. CI 8397 (RIA Section 3, Compliance Costs Emissions and Energy Impacts, Final Rules Supply Resource Utilization); *contra* CI0678 (LEC Comments Att. 2) (existing solar resources maintain constant accreditation of 55%). One needs no advanced training to understand that the sun does not shine on solar panels 100% of any year.

In addition, the assumptions EPA put into the model for its "Base Case" (i.e., projected electricity generation without the Rule, *see* CI8244 (89 Fed. Reg. at 39,899)) are simply wrong. Because the Base Case is incorrect, EPA grossly underestimated the impact of the Rule, rendering it arbitrary and capricious. EPA's Base Case is an outlier, inconsistent with every other available model, including DOE models. EPA overestimates the number of coal plants that will retire before 2030, forecasting coal capacity in the Base Case for that year to be only 73 GW.[17] CI8244 (89 Fed. Reg. at 40,005). The other models, including those

[17] EPA increased projected 2030 coal capacity by 4 GW in the Rule from the Proposed Rule's projection of 69 GW. CI8244 (88 Fed. Reg. at 33,410). This slight increase continues to be greatly at odds with the other models.

from DOE (the Energy Information Administration's 2023 Annual Energy Outlook and the National Renewable Energy Laboratory's Regional Energy Deployment System), the Electric Power Research Institute (the U.S. Regional Economy, Greenhouse Gas, and Energy model), and Resources for the Future (the Haiku model) forecast coal capacity in their base/reference case to be more than 100 GW in 2030. CI0710 (PGen Comments 98 and Att. M 6-7). EPA's underestimation of 2030 coal capacity leads to a significant underestimation of the Rule's costs. If nearly 30% more coal units are subject to the Rule than EPA projected, then the Rule's costs are significantly greater—regardless of whether the unit attempts to continue to operate after 2031 and comply with the Rule (which, as discussed *supra* Section I.A.2. is practically impossible in almost all cases) or whether the Rule forces the unit to retire (because of the cost of securing replacement generation).

Further skewing its analysis, EPA's Base Case projects far less renewable generation to replace retired coal generation than every other model. CI0710 (PGen Comments Att. M 7). Any credible modeling must assume each MW of always-ready and dispatchable coal-fired power must be replaced with multiple MWs of renewable generation because

renewables cannot always generate (*e.g.*, solar does not generate at night, wind does not generate on still days). DOE's models correctly assume renewables will replace coal-fired generation at ratios ranging from 15:1 to greater than 20:1. CI0710 (PGen Comments Att. M 8). All the models agree this is the case except for EPA's Integrated Planning Model, which wildly underestimated in the Proposed Rule that the renewables-to-coal-fired-power replacement ratio is 1.8:1 for 2030 and 1.5:1 for 2028. *Id*. Although EPA adjusted the ratio slightly in the Rule, increasing it to 3.2:1 for 2030 and 4.2:1 for 2028,[18] EPA's model still is vastly out-of-touch with DOE's models. This error results in vastly underestimated costs of replacement generation associated with the Rule. It also is problematic from a reliability standpoint, because if as much coal retires as EPA projects and there are not enough other generation resources to replace it, grid reliability will be severely affected.

EPA did not address the substance of these issues in the Rule. EPA addresses its outlier baseline only once when it says "[a] wide variety of modeling teams have assessed baselines with the [Inflation Reduction

[18] EPA increased its baseline of renewable capacity for 2028 from 298 GW in the Proposed Rule to 359 GW in the Rule. For 2030, the baseline was increased from 397 GW to 406 GW.

Act]. The baseline estimated here is generally in line with these other estimates." CI8244 (89 Fed. Reg. at 39,822 n.169). As shown above, that assertion is false: EPA's baseline is drastically different in several important respects than other models. EPA never explains why the renewables-to-coal generation replacement ratio that EPA has adopted is reasonable or why the different ratios used in other models (that are consistent with each other) are not. *Compare* CI8914 (RTC Chap. 14, 7) (commenters explaining "intermittent and limited duration resources require multiple megawatts to replace one megawatt of dispatchable generation"), *with* CI8914 (RTC Chap. 14, 10-12) (EPA failing to respond).

EPA's Base Case thus overlooks the key challenges facing the reliability of the electric grid related to the replacement of dispatchable fossil generation with renewables. If retired coal generation cannot be replaced in a timely and sufficient manner, reliability will suffer. And EPA did not consider factors relating to how *long* it takes to bring renewables online. *See* CI0710 (PGen Comments 99-101, Att. M at 11-16). EPA does not address anywhere the time it takes to connect new generation to the grid ("interconnection queues") or even project the rate

at which new connections would be required—a fatal flaw. Although EPA acknowledges comments regarding IPM's failure to address permitting constraints, project queues, and project completion rates, CI8914 (Response to Comments, Ch. 14 at 24-26), EPA provides no response other than to again describe its model and assert that its projections "are comparable to the recent historical data while maintaining resource adequacy within the model framework," CI8914 (Response to Comments 26). This "response" simply sidesteps the issue, leaving another consequential error that renders EPA's analysis of the Rule vacant, and the Rule itself arbitrary and capricious.

EPA's model also contains demonstrable and substantial errors that were pointed out to EPA in comments but were not fixed by EPA in the Rule. In the Proposed Rule, EPA's IPM assumed the retirement of 108 coal-fired units (51.4 GW) by 2028. CI0710 (PGen Comments 102, Att. M. 19). Commenters pointed out that 41 of those units (18.1 GW) have no plans to retire by 2028. *Id.* In response, EPA simply claimed that it is relying on "retirement announcements by owners and operators of coal EGUs." CI8914 (RTC, Ch. 14 at 10-11, 32). Inexplicably, however, fourteen of the units identified by commenters as containing retirement

errors (because they had *no* announced retirements) in the Proposed Rule continue to be included in the Rule's baseline. *See* CI0710 (PGen Comments 102, Att. M 19). EPA's assertion that it has relied on announced retirements cannot be squared with the substantial record evidence on retirement announcements that contradict EPA's model. Once again, EPA's error substantially underestimates the impacts associated with the Rule.

Commenters pointed out other errors that EPA failed to address. For example, the model projected that one facility would retire in the same year in which it was also projected to take on the enormous expense of retrofitting with CCS in the Base Case. CI0710 (PGen Comments 102). EPA projected that another unit would retire in 2028 but nonetheless modeled it as operating in the 2030 Base Case run. *Id*. And commenters showed that other units were treated illogically by the model in other ways. CI0710 (PGen Comments, Att. M 19-21). EPA simply never responded to these problems. *See* CI8914 (RTC, Ch. 14 at 20-21) (describing the ways EPA's model was updated between the proposed and final rules, but not including updates that address the problems

described above); *see* CI 8396 (RIA Section 3, EPA 2023 Reference Case, Ch. 1 at 1-2 to 1-3, Table 1-1) (same).

The arbitrary and capricious standard "includes a requirement that the agency . . . respond to 'relevant' and 'significant' public comments." *City of Portland v. EPA*, 507 F.3d 706, 713 (D.C. Cir. 2007) (alteration in original) (quoting *Pub. Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993)). EPA has failed this standard. Despite the many flaws pointed out to the agency in comments, EPA failed to correct its analysis, which means it failed to properly consider cost and reliability impacts as Congress directed. § 7411(a)(1). It also means that EPA disregarded or failed to properly analyze an "important aspect of the problem." *State Farm*, 463 U.S. at 43. Finally, EPA's failure to explain why commenters' concerns were incorrect or to meaningfully respond to comments violates the Clean Air Act. 42 U.S.C. § 7607(d)(6)(B).

Altogether, EPA abdicated its statutory responsibility to engage with energy requirements. And even if it did make some half-hearted effort, the result cannot be called reasoned decisionmaking. After all, EPA cannot ignore "contradictory evidence or evidence from which conflicting inferences could be drawn," nor can it minimize that evidence

without adequate explanation. *Morall v. DEA*, 412 F.3d 165, 177, 179-180 (D.C. Cir. 2005). Particularly when the evidence is seemingly contradictory, EPA needs to "articulate a satisfactory explanation" for why the balance still favors the Rule. *State Farm*, 463 U.S. at 43. EPA did not do that. It needs to start over with these grid concerns in mind and meaningfully consider and incorporate the reliability concerns of federal agencies, reliability coordinators, state regulators, and the power sector.

II. The 40% gas co-firing alternative BSER for existing coal units also exceeds EPA's statutory authority and is arbitrary and capricious.

The Rule offers existing coal units one BSER alternative to 90% CCS (other than retiring by 2032): the transformation of a coal-fired plant into a "hybrid" plant that co-fires natural gas for at least 40% of its annual heat input. CI8244 (89 Fed. Reg. at 39,801). The emission limit based on the 40% co-firing BSER requires any coal plant choosing this option to reduce its emission rate by 16% by 2030 and to commit to retiring by 2039. *Id.* This BSER involves modifications to the coal plant's boiler that may be extensive. In addition, a "supply of natural gas is necessary to enable co-firing." CI8244 (*Id.* at 39,892).

The 40% co-firing BSER exceeds EPA's statutory authority because it openly requires shifting generation from coal to gas, which is precisely what the Supreme Court held EPA cannot do. *West Virginia*, 597 U.S. at 728 & n.3.

The 40% co-firing BSER also violates Section 7411(a)(1) for three separate reasons. First, the emission limit based on 40% co-firing is not *currently* achievable for all sources nationwide because the majority of coal plants do not have access to natural gas. Second, even if Section 7411(a)(1) authorizes EPA to require the construction of massive pipeline infrastructure, which it does not, the emission limit based on 40% co-firing is *still* not achievable because (a) even if a facility has access to gas, it may be unable to obtain a sufficient and consistent supply of gas to operate and (b) the pipeline infrastructure cannot be permitted and constructed by 2030. Third, the 40% co-firing system is not cost-effective.

A. The Rule's 40% gas co-firing system runs afoul of the Supreme Court's admonition that EPA cannot require generation-shifting under Section 7411.

The Rule's standards for coal plants based on 40% co-firing explicitly require shifting energy generation from coal to gas—precisely what the Supreme Court has held EPA cannot do. *West Virginia*, 597 U.S.

at 728-297. EPA has no authority to require a plant to change fuel type by switching 40% of its generation from coal to gas. *See id.* at 728 n.3 (expressing "doubt" EPA could "requir[e] coal plants to become natural gas plants").

EPA tries to distinguish the Supreme Court's direct language by saying "the Court was referring to a complete transformation of the coal-fired unit to a 100 percent gas fired unit" and by noting that the Court referenced "fuel-switching" among the types of "traditional" air pollution measures authorized by Section 7411. CI8244 (89 Fed. Reg. at 39,901-02). But the traditional types of fuel-switching that the Supreme Court referenced did not involve a change from one fuel to an entirely different one. Rather, it reflects measures such as switching from high-sulfur coal to lower-sulfur coal, which has long been an accepted emissions reduction method. *See* 70 Fed. Reg. 61,081, 61,083 (Oct. 20, 2005) ("The first [performance standards] for EGUs . . . required new units to limit SO_2 emissions either by using scrubbers or by using low sulfur coal.").

EPA provides three past examples of "fuel-switching" that it says support its contention that there is nothing new here. CI8244 (89 Fed. Reg. at 39,901-02). But all these examples involve standards for new

sources that simply required a lower-emitting version of a compatible fuel. The first two involved performance standards for new compression ignition internal combustion engines and new electric generation combustion turbines. The BSER for these standards was based on the ability of these new sources to use certain lower emitting fuels of the same type (ultra-low sulfur diesel for the engines and natural gas for combustion turbines, with distillate oil allowed only as backup). CI8244 (*Id.* at 39,901). EPA's third example involved a standard under the hazardous air pollutants program, which required certain new oil-fired boilers to combust only ultra-low-sulfur oil. CI8244 (*Id.* at 39,901-02). None of these examples involved a wholesale switch to an entirely different type of fuel. In essence, the examples EPA cites are akin to requiring a switch from regular gasoline to premium for your car. But the Rule's 40% co-firing system is more like requiring you to modify your existing car that runs on gasoline to run on electricity 40% of the time.

Moreover, requiring an existing coal facility to transform itself to enable 40% gas co-firing is entirely different than requiring a brand-new source to be constructed in way that allows it to burn a certain fuel (as was the case with EPA's examples). The Rule would require changes to

the facility's boiler, including "possible modifications" to millions of dollars of equipment such as the "steam superheater, reheater, and economizer heating surfaces that transfer heat from the hot flue gas." CI0061 (GHG Mitigation Measures-Steam 9). Even determining whether and how the modifications can be done at a specific facility takes years of engineering work and studies. *Id.*; CI0770 (NRECA Analysis of Fuel Switching 8). That is part of why EPA is not requiring the transformation to be complete until 2030. This is not a matter of merely switching to a cleaner version of the fuel a facility was designed to burn.

In sum, EPA cannot select a BSER under Section 7411 where the emission reduction comes from a switch from coal to natural gas—even at 40% rather than 100%. This is the generation-shifting the Supreme Court said EPA cannot do, and it runs afoul of the long-standing principle in the Clean Air Act that EPA cannot "redefine the source."[19]

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[19] *See, e.g.*, *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 331 (2014) (finding that Best Available Control Technology, which is intertwined with Section 7411, "cannot be used to order a fundamental redesign of the facility"); *In re Prairie State Generating Co.*, 13 E.A.D. 1, 20 (EAB 2006) (holding it is "long-standing EPA policy that certain fuel choices are integral to the electric power generating station's basic design") (citing EPA's NSR Manual at B.13 and quoting in a parenthetical that "applicants proposing to construct a coal-fired electric generator, have

B. EPA's 40% co-firing BSER violates Section 7411(a)(1).

1. The 40% co-firing system is not achievable because the vast majority of coal plants have no access to natural gas.

A performance standard must "*reflect[]* the degree of emission limitation *achievable* through application of the" BSER. § 7411(a)(1) (emphases added). Congress's use of the present tense in Section 7411(a)(1), which "is significant in construing statutes," means the emission limit must be achievable *now*. *Wilson*, 503 U.S. at 333. This Court has also made clear that achievability requires the "industry as a whole" be able to meet a performance standard. *Nat'l Lime Ass'n*, 627 F.2d at 431. For that reason, a performance standard must represent the "least common denominator" that can "be reasonably achieved by [a] . . . source anywhere in the nation." McCutchen Letter 1.

The Rule's emission limit based on the 40% co-firing BSER is not achievable now for the industry as a whole because two-thirds of the

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not been required by EPA as part of a [Best Available Control Technology] analysis to consider building a natural gas-fired electric turbine although the turbine may be inherently less polluting per unit product"); *Sierra Club v. EPA*, 499 F.3d 653, 655-56 (7th Cir. 2007) (recognizing the choice of fuels is an essential part of the source's purpose and design, and requiring a source to change its design to combust an alternative fuel constitutes redefining the source).

nation's coal plants do not have access to *any* natural gas. CI0710 (PGen Comments 59). EPA does not dispute this is the case. Instead, it says "plants may find it necessary to construct natural gas pipelines." CI8244 (89 Fed. Reg. at 39,893). But this only underscores the infrastructure needed to make the limit achievable *now* does not exist. Applying EPA's BSER of "natural gas co-firing at 40 percent of heat input," CI8244 (89 Fed. Reg. at 39,896), to the industry as a whole does not result in an achievable standard because the vast majority of the coal plants do not have access to the necessary gas. Emission limits are not achievable when, "by design, there are no particular controls a coal plant operator can install and operate to attain the emissions limits." *West Virginia*, 597 U.S. at 701. A coal plant operator can make all the necessary changes to enable the boiler to combust gas, but the emission limit still cannot be achieved unless there is gas at the plant. And for two-thirds of coal plants, that is not the case.

Nothing in Section 7411(a)(1) authorizes EPA to require the construction of thousands of miles of gas pipelines. This is not the typical installation of pollution controls, modification of the source, or adjustment in operations that a performance standard might require. It

goes far beyond that and cannot "be *reasonably* achieved . . . anywhere in the nation." McCutchen Letter 1 (emphasis added); *see also West Virginia*, 597 U.S. at 726-28 & nn.2, 3 (discussing section 7411's focus on "at-the-source" technology measures).

Because application of the BSER (40% co-firing) to the majority of coal plants cannot result in the emission limit being achieved, the Rule violates the Act.

2. Even if EPA can require pipeline construction under Section 7411(a)(1), the standard based on 40% co-firing is still not achievable.

Even if the Act allows the achievability of a performance standard to depend on the future construction of significant pipeline infrastructure, the emission limit based on 40% co-firing remains unachievable. First, even those plants that have access to gas now or that build pipelines to gain such access may not be able to obtain sufficient amounts of gas on a consistent basis to enable them to co-fire at the required level, especially given the huge increase in gas demand for power generation that the Rule will require. Second, the pipelines needed to achieve the standard cannot be permitted and constructed by 2030.

a. Co-firing requires access to a continuous supply of natural gas that facilities may not be able to obtain.

Even if a plant is one of the few that have access to natural gas, the emission limit based on the 40% co-firing BSER is still not achievable because it may not be possible to access a sufficient supply of natural gas to co-fire at this rate on a consistent basis. As EPA recognized in the Affordable Clean Energy Rule, while about one-third of coal plants have access to some amount of natural gas, only four percent of those plants actually co-fire significant amounts of natural gas for the purpose of generating electricity. 84 Fed. Reg. at 32,544. The majority of plants with access to gas use only small amounts for the purposes of starting up the boiler or holding it in "warm standby." *Id.*

As commenters explained, the ability to co-fire gas at the Rule's 40% level requires the plant to have "firm access" to natural gas. CI0710 (PGen Comments 60). Firm access (also called "firm power") means the gas supply is not subject to interruption, "even under adverse conditions." *Firm Power,* U.S. Energy Information Administration Glossary ("EIA Glossary"), https://www.eia.gov/tools/glossary. Commenters expressed concern that they would not be able to obtain the necessary supply of gas

that would enable them to co-fire at 40% because firm access is less available than the non-firm form of access that is far more common at existing coal plants. CI0710 (PGen Comments 60); CI0770 (NRECA Comments 14); CI8175 (America's Power Comments 27-33 & Att.); CI0695 (NMA Comments 48-54 and Att. A 11-17).

In response, EPA stated it assumes any additional gas capacity needed "would be provided to [coal] plants on a 'firm' basis." CI8914 (RTC, Chap. 6 at 10). But merely *assuming* the opposite of a commenter's concern fails to actually address that comment. That is arbitrary and capricious. *See Nat'l Gypsum Co. v. EPA*, 968 F.2d 40, 43 (D.C. Cir. 1992) (rejecting EPA action based on "nothing more than unsupported assumptions").

EPA then says that its consultant ICF has "confirm[ed] that gas can be adequately supplied through spot purchase arrangements to support . . . cofiring." CI8914 (RTC, Chap. 6 at 10). But firm access and the spot market are vastly different. The spot market is "[a] market in which natural gas is bought and sold for immediate or very near-term delivery, usually for a period of 30 days or less." *Spot Market,* EIA Glossary, https://www.eia.gov/tools/glossary. The spot market does not provide the

uninterruptible, consistent, and dependable supply of gas needed for 40% co-firing.

So in response to a serious concern about whether plants will be able to obtain a sufficient supply of gas on the firm access basis needed to achieve the 40% co-firing emission limit, EPA said it assumes plants can get firm access to the gas they need—even though EPA's consultant confirms the gas the covered facilities can obtain is *not* the continuous, uninterruptible supply of firm gas needed to achieve the standard. This is the epitome of arbitrary and capricious rulemaking.

EPA also failed to respond to comments explaining that "the presence of a natural gas pipeline near a plant is not an indication of adequate capacity." CI0710 (PGen Comments, Att.. K at 7). For example, a map from the Energy Information Administration shows a gas line just east of the Coal Creek Station in North Dakota. But "that line does not even have enough capacity to provide ignition fuel for the 1,100 MW coal plant. The nearest pipeline with adequate capacity is over 40 miles from the plant." CI0710 (*Id.*, Att. K at 6-7). Instead of addressing this issue, which involves access to a sufficient amount of gas, EPA glibly "disagree[d] with the assertion that most of the coal fleet is located a long

distance from pipeline gas supply infrastructure and storage." CI8914 (RTC, Ch. 6 at 6). EPA's failure to consider or substantively grapple with pipeline capacity and whether plants can access the required amount of gas to achieve the 40% co-firing emission limit is a failure "to consider an important aspect of the problem." *State Farm*, 463 U.S. at 43.

b. EPA's timeline for necessary pipeline construction is unrealistic and flawed.

The emission limit based on the 40% co-firing BSER is unachievable because the timeline for constructing the required pipeline infrastructure is unrealistic. Coal plants opting for the 40% gas co-firing subcategory must comply with the emission limit by 2030. CI8244 (89 Fed. Reg. at 39,801). As discussed above, two-thirds of the nation's plants do not have access to *any* gas, meaning they will need to construct a pipeline to their facility. That construction cannot be completed "for the industry as a whole" by 2030. *Nat'l Lime*, 627 F.2d at 431.

As discussed in Section I.A.2, building a pipeline is an onerous endeavor that may not be approved, may be delayed or canceled, and will take years to permit and construct even if it is ultimately approved. CI8182 (EEI Supplemental Comments 31); CI0710 (PGen Comments 65 & Att. K at 7). EPA claims "it is reasonable to assume that permitting

and construction [of a pipeline] would take no more than 3 years for most sources (June 2026 to June 2029)." CI8244 (89 Fed. Reg. at 39,893). EPA also assumes that "startup and testing takes about 2 months (June 2029 to August 2029)." CI8244 (*Id.* at 39,894). Based on these assumptions, EPA set a compliance date for coal plants choosing the 40% co-firing option of January 1, 2030. *Id.*

EPA's claim that permitting and construction can be done in no more than three years relies on an analysis by its consultant ICF finding "the average time it will take to design, permit, and construct lateral[] [pipelines] to coal plants is about three years." CI9095 (GHG Mitigation Measures-Steam TSD, Att. 18 at 42). But EPA utterly ignores ICF's caution that "it should be recognized that some projects could take . . . *up to five years for approval and construction if they experience difficulties.*" *Id.* (emphasis added). Thus, EPA's own assertions make its three-year timetable arbitrary.

"[T]o be achievable, . . . a uniform standard must be capable of being met under *most adverse* conditions which can reasonably be expected to recur." *Nat'l Lime*, 627 F.2d at 431 n.46 (emphasis added). Based on the recent history of pipeline construction, it is reasonable to expect pipeline

owners will "experience difficulties" that could increase the timetable up to five years. *See, e.g.*, *PennEast Pipeline*, 594 U.S. at 490-92 (describing more than six years of regulatory proceedings and litigation simply to secure the right to condemn land needed for a gas pipeline); CI0770 (NRECA-EERC Comments 11-12) (addressing time needed for pipeline construction). Indeed, it has become commonplace for pipeline projects to be met with resistance, subjecting the projects to years of litigation, and in many cases making construction impossible. *See, e.g.*, CI0710 (PGen Comments 35 & n.128 (referencing cancellation of Atlantic Coast Pipeline and halting of Mountain Valley Pipeline). It is arbitrary and capricious for EPA to look only at the *most favorable* conditions and ignore common adverse conditions that could increase the timeline by years, making the 40% co-firing emission limit unachievable because the 2030 deadline cannot be met.

Further, EPA's three-year timeline envisions permitting and construction beginning in June 2026, "after the state plan is submitted." CI8244 (89 Fed. Reg. at 39,893). State plans are due by May 11, 2026. 40 C.F.R. § 60.5785b(a). But EPA can take up to 14 months (i.e., until July 2027) to approve a State plan after the State submits it. *Id.* § 60.27a(b),

(g). Coal plant owners should not have to make legally binding pipeline construction commitments when it remains unclear whether their State's plan will be approved. CI0710 (PGen Comments 108). If permitting and construction does not begin until after EPA's approval of a State plan in July 2027, EPA's optimistic three-year estimate misses the Rule's 2030 deadline.

EPA's timeline analysis is further flawed because it reviewed only the timelines for permitting and construction of lateral pipelines. CI9095 (GHG Mitigation Measures-Steam TSD, Att. 18 at 41-43). Lateral pipelines connect a facility to a nearby existing pipeline, and as a result, they tend to be shorter in length (taking less time to construct) and not as controversial because they tap into an already-existing pipeline (taking less time to permit). *See* CI8244 (89 Fed. Reg. at 39,893 ("Most" of the lateral pipelines needed to comply with the Rule "are less than 15 miles in length.")).

But there is no guarantee that all of the necessary pipeline projects to comply with the Rule will be laterals. As ICF found during its initial screening for its timeline analysis, many power plants are served by non-lateral pipelines. CI9095 (GHG Mitigation Measures-Steam TSD, Att. 18

at 41 (identifying—and excluding from analysis—ten "non-lateral projects that solely serve power plants" completed in 2015-2022)). Including non-lateral pipelines in its timeline analysis likely would have changed EPA's "assum[ption] that permitting and construction would take no more than 3 years for most sources" because those pipelines take more time to permit and construct since they are longer and entirely new. CI8244 (89 Fed. Reg. at 39,893). It was therefore arbitrary and capricious for EPA not "to consider an important aspect of the problem" and assess the amount of time it would take for *all* facilities to obtain natural gas access, including those needing a non-lateral line. *State Farm*, 463 U.S. at 43.

Because EPA's three-year timeline for pipeline construction and permitting is unrealistic and relies on a flawed analysis, coal plants cannot achieve the emission limit based on the 40% co-firing BSER by the Rule's 2030 deadline.

3. The 40% Co-Firing BSER Is Not Cost-Effective Because of the Need to Construct Pipeline Infrastructure.

Section 7411 standards are supposed to "focus[] on improving the emissions performance of individual sources" through "traditional air

pollution control measures" like "add-on controls." *West Virginia*, 597 U.S. at 726-27 (internal citation and quotation omitted). But the Rule would require facilities to construct gas pipelines spanning many miles and costing billions of dollars, not emissions controls. CI8244 (89 Fed. Reg. at 39,893). Even if Section 7411 authorized EPA to mandate such an infrastructure buildout, which as discussed above it does not, EPA must first ensure that it would be cost effective to do so. *See* § 7411(a)(1) (directing EPA to account for cost in setting performance standards).

By EPA's own estimates, the Rule would require 3,500 miles of pipeline at a cost of approximately $11.5 billion, or over $3 million per mile of pipeline. CI8244 (89 Fed. Reg. at 39,893); *see also* CI0710 (PGen Comments 59-60) (estimating costs at $4 to $10 million per mile). EPA posits this is an acceptable level of cost because "[a]pproximately $5 to $10 billion annually is expected to be invested in natural gas pipelines through 2035." CI8244 (89 Fed. Reg. at 39,893). This is a non-sequitur. The fact that pipeline investments are expected over the next decade for a variety of reasons unrelated to the Rule does not justify adding $11.5 billion *more* in spending, nor does it render the Rule cost-effective.

At a minimum, it was incumbent on EPA to analyze the cost in light of the nine-year return period the Rule imposes by requiring any unit that opts for 40% co-firing (thus expending enormous sums to modify the boiler and construct the pipeline infrastructure to meet the standard) to retire by 2039. *See, e.g.*, CI542 (EKPC Comments 35) ("This cost is unjustifiable generally, and especially considering that co-firing only extends the operational life of these units for [9] additional years past 203[0]."); CI0896 (*Id.* at 41) ("The cost metrics simply do not work to gain only [nine] more years of operation.").

EPA claimed it did analyze costs over this short return period, but it based its analysis on its flawed assumptions. CI8244 (89 Fed. Reg. at 39,894). As noted above, EPA based its cost estimates on its *false* assumptions that pipelines near plants have sufficient capacity and that most plants would not have to build long pipelines. Perhaps recognizing that assumptions do not meet reality, EPA says that "[i]f a particular source has costs of 40 percent co-firing that are fundamentally different from the cost reasonability metrics, the state may consider this fact" in developing its plan. *Id.* But EPA does not say what it would consider

"fundamentally different," and it has tightly constrained States' abilities to account for site-specific concerns in State plans. *See infra* Section IV.

In sum, the Rule's 40% gas co-firing requirement for coal plants violates the statute because it is neither achievable nor cost-effective. For all these reasons, the 40% co-firing alternative to 90% CCS is unlawful, and the Rule should be vacated.

III. The major-questions doctrine confirms that EPA exceeded its authority.

In declaring the Clean Power Plan's generation-shifting approach unlawful, the Supreme Court held that even "a colorable textual basis" cannot justify a rule that purports to address a major question; the agency needs to find a *clear* statement from Congress to tackle such an issue. *West Virginia*, 597 U.S. at 722-23. This Rule lacks even a colorable basis—*see supra* Sections I and II. And the Clean Air Act certainly has no clear statement authorizing anything like the Rule. EPA has ventured back into major-questions territory without a clear congressional authorization, further confirming the Rule is unlawful.

Addressing the same statutory provision and same segment of power generation, *West Virginia* explained that EPA must regulate the industry as it finds it—not remake it by "direct[ing] existing sources to

effectively cease to exist." *West Virginia*, 597 U.S. at 728 n.3. Whether "it would be 'best' if coal made up a much smaller share of national electricity generation" is a "very different kind of policy judgment" than Section 7411 allows. *Id.* at 728. Congress kept the question of "how much coal- based generation" should exist for itself, *id.* at 729, and EPA could not "restructure[e] the Nation's overall mix of electricity generation," *id.* at 720. So in *West Virginia*, EPA went too far in overtly requiring coal-fired facilities to "reduce their own production of electricity, or subsidize increased generation by natural gas" and other sources. *Id.* at 706. Instead, EPA needed to focus on measures that would "caus[e] plants to *operate* more cleanly." *Id.* (emphasis added).

The Rule achieves the same result as the unlawful Clean Power Plan at issue in *West Virginia*—massive generation-shifting from coal-fired energy to renewables—and thus implicates the major questions doctrine for the same reasons.

The Rule still involves issues of nationwide "political significance." *Util. Air Regul. Grp.*, 573 U.S. at 324 (internal quotation marks omitted). Compliance costs and the attendant economic impact are still enormous, making clear that the major-questions doctrine applies. *See Ala. Ass'n of*

Realtors v. HHS, 594 U.S. 758, 764 (2021) (citing program's "billions" in "economic impact"); *King v. Burwell*, 576 U.S. 473, 485 (2015) (same). EPA still lacks energy expertise in "electricity transmission, distribution, and storage." *West Virginia*, 597 U.S. at 729; *cf. Texas*, 829 F.3d at 432 (noting "EPA has no expertise on grid reliability"). Congress still has not legislated despite the "well known" issues at stake, and EPA still lacks "clear authorization" to act in its stead. *West Virginia*, 597 U.S. at 731-32; *see also, e.g.*, H.R. 2519, 117th Cong. (2021) (failed congressional attempt to impose CCS); H.R. 4535, 114th Cong. (2016) (same); S. 4280, 117th Cong. (2022) (same).

EPA also again claims "newfound" and "transformative" authority in the way it has justified the Rule. *West Virginia*, 597 U.S. at 724. EPA has repeatedly insisted that the Rule is just another pollution regulation—but while Congress directed EPA to focus on what "has been adequately demonstrated" in the past, § 7411(a)(1), EPA has newly transformed that into a power to impose a system (90% CCS) never before accomplished. Nor did Congress use clear language giving EPA the transformative power to remake the Nation's energy grid through future-looking "extrapolat[ions]." CI8244 (89 Fed. Reg. at 39,889).

EPA has long set standards based on what has "been . . . demonstrated" in the past and is "achievable" currently, *see West Virginia*, 597 U.S. at 709, but EPA identifies no prior rulemaking in which it designated a BSER that had never before been used anywhere. And the Rule relies on projects with unknown capture rates that merely "ha[ve] been announced," CI8244 (89 Fed. Reg. at 39,928); pipelines that EPA "anticipates . . . may develop," CI8244 (89 Fed. Reg. at 39,855); and potential storage sites "in the process of completing . . . studies," CI8244 (89 Fed. Reg. at 39,862).

In other words, EPA now thinks it can act based on its own hopes and projections. This move from established technology to hopeful prognostication transforms the whole regulatory scheme, forcing producers to gamble on uncertain (and unlikely) measures or abandon the business entirely. *Contra Portland Cement,* 486 F.2d at 391 (Section 7411 determination "cannot be based on 'crystal ball' inquiry").

Moreover, EPA blinds itself to the *effect* of its broad mandates. And effects matter. It may be true that "reduc[ing] air pollution from power plants . . . is EPA's bread and butter," but that was not enough to justify its actions in *West Virginia*. 597 U.S. at 730. Ordinary "emissions

ceilings" became transformative because they were "so strict that no existing coal plant" could achieve them without shifting generation or stopping operations. *Id.* at 714. Likewise, measures to address infectious disease may fall within the core powers of the Centers for Disease Control, but the Supreme Court still found CDC overstepped when it tried to use those powers to address a major question in an unexpected new way. *Ala. Ass'n of Realtors*, 594 U.S. at 763-65. So when it comes to the major questions doctrine, even an act that might be dressed as a traditional power falling within an agency's usual domain can be stretched and warped too far. It's the "basic and consequential tradeoffs" at stake that make something "major." *Nebraska*, 143 S. Ct. at 2375 (cleaned up).

The Rule also mandates two massive pipeline networks (one for CO_2, and one for gas) and plus geological storage (often off-site). Neither of those is an emission "add-on control" of the sort that the agency usually requires. *West Virginia*, 597 U.S. at 727 (cleaned up). No clear statement authorizes EPA to require power plant operators to design, permit, build, and operate inter- and intra-state pipelines and CO_2 storage locations. *See West Virginia*, 597 U.S. at 735. Just the opposite, really. Performance

standards apply to "sources," not owners, operators, or society as a whole. § 7411(a), (b), (d). Indeed, "for the first four decades of [§ 7411's] existence" EPA correctly read the Act to refer only to measures applied at a source to improve its emissions. *West Virginia*, 597 U.S. at 734.

Building out the CO_2-pipeline network and the storage sites that are necessary under the Rule requires *other* industries to transport and sequester CO_2—or else forces power plant operators to enter into new ventures. But neither of those buildouts are "measures that improve the pollution performance of individual sources." *Id.* The same is true for the buildout of natural gas pipelines for the 40% co-firing alternative BSER. EPA lacks authority to require these new, major buildouts. And, as noted already, in calling for co-firing or retirement in lieu of CCS, the Rule even embraces the same "generation shifting" *West Virginia* expressly rejected. *See supra* Section II.

In short, although EPA might have taken a slightly different tack from the Clean Power Plan, the result is the same: the Rule would invoke new and transformative authority to functionally and intentionally eliminate coal and other fossil fuel-fired source categories from the market. Given the impossibility of the Rule's standards for almost all

power plants, this case does not involve mere "incidental" effects on the power industry. *West Virginia*, 597 U.S. at 731 n.4. Rather, it involves direct power regulation—something that does *not* "fall[] well within EPA's bailiwick." *West Virginia v. EPA*, No. 24-1120 (D.C. Cir. July 19, 2024), 2024 WL 5542546 *1 (order denying Petitioners' stay request).

EPA runs from this reality by suggesting that many coal plants are set to retire all on their own, reasoning that the Rule therefore does not engage with a major question in precipitating their demise. But EPA's own estimates show many plants were slated to stay open. CI8244 (89 Fed. Reg. at 39,822). Even EPA is eventually forced to admit what the modeling shows: that "most sources that install CCS [will] retire [by 2045] due to the costs of meeting" the Rule's standards. CI8244 (89 Fed. Reg. at 39,900). It likewise admits that the Rule will kill all non-CCS coal by 2035 and produce a net loss of 32 coal GW by that same year. *See* CI0237 (Mem. on Add'l Modeling Analysis Tbl. 12). At bottom, the Rule will drive retirements across the country—and much sooner.

EPA knows that the Rule will mean "less electricity" from "coal-fired power plants" and more from "other sources." CI8244 (89 Fed. Reg. at 39,899). So it tries to relabel this reality as the consequences of

voluntary choices or market effects. Yet "[w]hat cannot be done directly cannot be done indirectly." *Students for Fair Admissions, Inc. v. President & Fellows of Harvard Coll.*, 600 U.S. 181, 230 (2023) (cleaned up). Allowing EPA to employ an elastic view of "adequately demonstrated" and "achievable" would enable it to indirectly "force a nationwide transition away from the use of coal" that Congress has not clearly authorized. *West Virginia*, 597 U.S. at 735. Indeed, by making outright closure the inevitable outcome for so many facilities here, this Rule is even more pernicious than the version that the Court grappled with in *West Virginia*.

Thus, this Rule offends the major-questions doctrine just like the Clean Power Plan did in *West Virginia*. The Court should turn reject EPA's effort to evade that decision.

IV. The Rule unlawfully infringes on the States' discretion.

The Rule also infringes on States' statutory authority. It effectively erases States' authority to set "standards of performance" for existing sources by crafting a new requirement that States show "fundamental differences." And it removes their discretion to permit variances based on source-specific factors like a plant's "remaining useful life" by

establishing an atextual, heightened standard for deviation. § 7411(d)(1). By subcategorizing coal plants based on their remaining useful life and disallowing variances based on anything the agency already considered, EPA likewise takes for itself States' discretion to consider that factor.

"States set the actual rules" for existing sources. *West Virginia*, 597 U.S. at 710. State plans must "reflect[]" the emission limitations EPA's best system can achieve, § 7411(a)(1), not mirror them. That, combined with EPA's obligation to permit source-specific tailoring, § 7411(d)(1), means Section 7411(d) "gives substantial latitude to the states in setting emission standards," *Nat'l-Southwire Aluminum Co. v. EPA*, 838 F.2d 835, 838 (6th Cir. 1988).

Yet in the Rule, EPA takes for itself discretion that the Act expressly reserves for the States.

A. Section 7411(d) gives States wide discretion.

The Act's text and history confirm that States enjoy broad discretion in developing State plans governing existing sources.

1. Start with text. Section 7411 is "an exercise in cooperative federalism." *Env't Comm. of Fla. Elec. Power Coordinating Grp. v. EPA*, 94 F.4th 77, 93 (D.C. Cir. 2024) (discussing § 7410 framework also

required under, and referenced by, § 7411(d)). After EPA sets the "standards of performance" for existing sources, States must submit plans that "implement[] and enforce[]" them. § 7411(d)(1)(a). Then, EPA "shall permit the State in applying a standard of performance to any particular source…to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies." § 7411(d)(1)(B).

States have tremendous "leeway," "consistent with their particular circumstances and priorities," in crafting State plans. *Env't Comm. of Fla.*, 94 F.4th at 93. Section 7411(d)(1)'s "shall" command emphasizes that EPA *must* allow States to consider remaining useful life and other factors. Section 7411(d)(1) does not limit States' ability to account for these factors, save for the reasonableness required in all regulatory decision-making. *Cf. Alaska Dep't of Env't Conservation ("ADEC") v. EPA*, 540 U.S. 461, 490 (2004).

Thus, Congress *required* EPA to respect State discretion in adjusting standards of performance for existing sources, so long as the States' choices are reasonable. Contrast this mandatory language with Section 7411(b), where Congress gave EPA a primary role in new-source

regulation by establishing federally mandated "standards of performance for new sources." As that language shows, Congress knows how to leave choices to EPA and restrict State discretion—it did not here.

2. Section 7411(d)'s history confirms States' discretion. When first enacted, the Act did not mention standards for existing sources based on remaining life and other factors. *See* Public Law 91–604, § 7411(d)(1) (Dec. 31, 1970), 84 Stat. 1676. EPA "recognized, however, that application of [the default] standards may be unreasonable in some situations. For example, to require that existing controls be upgraded by a small margin at a high relative cost may be unreasonable."[20] 39 Fed. Reg. 36,102, 36,102 (Oct. 7, 1974). EPA thus promulgated regulations that permitted States to "appl[y] less stringent emission standards" when "plant age, location, or basic process design" made the "cost of control" unreasonable, it was physically impossible to install necessary control equipment, or

[20] Indeed, the issues and complications that arise with adding controls to an existing source is probably why Congress *requires* EPA to take remaining useful life and other factors into account in situations where EPA steps into the role of the States. § 7411(d)(2) (stating "the Administrator *shall* take into consideration" these factors (emphasis added)).

other specific factors made "application of less stringent standards *significantly more reasonable*." *Id.* at 36,104 (emphasis added).

Congress then amended the Act to protect States' discretion. Congress declined to adopt EPA's requirement that States demonstrate their revised standards were "significantly more reasonable." Instead, the 1977 amendments granted States authority to "take into consideration[,] among other factors, the remaining useful life of the existing source." Public Law 95-95, Title I, § 7411(d) (Aug. 7, 1977), 91 Stat. 685, 699. This language, unchanged today, omits any requirement for States to establish that less stringent standards are "significantly more reasonable."

By declining to adopt EPA's regulatory restriction in its amendment, Congress made clear that States must have discretion, unfettered by EPA-imposed hurdles. When Congress "codif[ies]" part of a regulation, but not all of it, courts enforce only the provisions Congress chose to enact. *See Kucana v. Holder*, 558 U.S. 233, 249-50 (2010). Thus, Section 7411(d) denies EPA the authority to demand heightened justifications for State plans.

3. This approach makes good sense, too. States know their residents' needs better than the federal government. They understand their unique geographical, socioeconomic, infrastructural, and other challenges better. Local knowledge is critical in crafting effective environmental policies. State officials are closer to and thus more accountable to their constituents. These inherent aspects of state governance allow States to respond to changing conditions on the ground more nimbly and surgically than the federal government can. States also bring experience in day-to-day utility regulation, coupled with longstanding relationships with utility providers. And state environmental agencies are as committed, skilled, and trustworthy as their federal counterparts. *See* Alison Koppe, *Regulate, Reuse, Recycle: Repurposing the Clean Air Act to Limit Power Plants' Carbon Emissions*, 41 Ecology L.Q. 349, 368 (2014) ("[Section 7411(d)] regulations … [are] based on the principle that the states are the best judges of what types of emissions control regimes are most suited to local conditions.").

So, the Act's text and history show that States have wide discretion in developing standards of performance for existing sources.

B. The Rule tramples on that discretion.

The Rule erases States' statutorily guaranteed discretion, forcing them to rubber-stamp EPA's impossibilities and preventing them from meaningfully mitigating resulting harms. These problems doom *all* the Rule's existing-source regulations.

1. The Rule effectively mandates that States adopt EPA's "presumptive standards." CI8244 (89 Fed. Reg. at 39,956). These extra-statutory presumptions go beyond shortcuts: EPA will declare plans "satisfactory" only if they "achieve at least the level of emission reduction" the "presumptive standards" do. *Id.* In fact, the Rule affirms States' "authority to deviate" from EPA's path only where they seek "to apply a more stringent standard of performance"—EPA will accept *those* standards without additional justification. CI8244 (*Id.* at 39,957). Though EPA says its presumptive-standards "approach is specifically designed to be flexible enough to accommodate unit-specific circumstances," different methodologies are "limited to anticipated changes in [plant] operation." CI8244 (*Id.* at 39,957-58).

This approach borders on unlawful direct regulation. While EPA may voice a "preferred approach" for State plans, it cannot erase States'

discretion by insisting on it. *See Train v. NRDC*, 421 U.S. 60, 69 (1975). Its role is to "guide States" in setting standards. *West Virginia*, 597 U.S. at 728 n.3; *accord Wyoming v. U.S. Dep't of the Interior*, 493 F. Supp. 3d 1046, 1071 n.23 (D. Wyo. 2020) (noting that EPA "guide[s] the States as to what emission reductions *may* be achievable"). Without the "real choice" the statute provides, *Michigan v. EPA*, 213 F.3d 663, 687 (D.C. Cir. 2000), the Rule reduces States to EPA underlings instead of co-regulators.

To be sure, beyond the reasoned rulemaking requirement discussed above for all regulations, the Act requires EPA to ensure that State plans are "satisfactory." § 7411(d)(2)(A). Under the Rule, however, EPA will not find a State plan "satisfactory" unless it fails to "achieve at least the level of emission reduction" the "presumptive standard[s]" do. CI8244 (89 Fed. Reg. at 39,956). Yet "satisfactory" should set a low bar—meaning "[a]cceptable," "[a]dequate," or "just good enough." *Satisfactory*, *Black's Law Dictionary* (12th ed. 2024).

If a State plan is "reasonably moored to the Act's provisions," and involves judgments supported by a "reasoned analysis," neither EPA nor federal courts may "second guess" it. *ADEC*, 540 U.S. at 485, 487, 490

(explaining standard for source-specific permitting decisions under Section 7413 of the Clean Air Act). EPA lacks broad power to reject State plans. Indeed, Congress imposes a *non*discretionary duty on EPA to "permit" States' reasonable judgments. § 7411(d).

2. The Rule erases States' discretion to grant source-specific variances based on a particular source's "remaining useful life" and "other factors." *Id.* For one thing, EPA says States may deviate from the federal standards only if they show a "fundamental difference[]" between what "EPA considered" and "the information specific to a facility." CI8244 (89 Fed. Reg. at 39,966). Recall also that EPA subcategorized performance standards for existing coal plants based on their remaining life—applying less-strict rules to coal plants closing earlier. *See* CI8244 (*Id.* at 39841). By baking remaining useful life into its presumptive standards, EPA eliminated States' authority to point to remaining useful life as a fundamental difference that EPA has not considered.

The atextual, fundamental-difference standard is in error. The Rule leaves next to no room for source-specific discretion, requiring "fundamental differences" to justify discretion. CI8244 (*Id.* at 39,962). And despite near-binding presumptive standards, the Rule refuses to

"provid[e] presumptively approvable circumstances or analyses" for source-specific considerations—suggesting few, if any, exist. CI8244 (*Id.* at 39,964). The Rule admits that "remaining useful life" is "intended as a limited variance from the EPA's determination to address unusual circumstances at particular facilities." CI8244 (*Id.* at 39,962). And while EPA says it will consider "[u]nreasonable cost," "physical impossibility or technical infeasibility," and "other circumstances specific to the facility" when evaluating whether a State has appropriately employed the remaining-useful-life factor, CI8244 (*Id.* at 39,964), EPA has already brushed aside in the Rule evidence that CCS is unreasonably expensive as well as technically and physically impossible, making it difficult to believe that EPA will give any consideration to these factors in evaluating a State plan. Altogether, EPA is telling States that they cannot deviate from the Rule.

In a lawful emission guideline under Section 7411(d), where States truly have "substantial latitude," *Env't Comm. of Fla.*, 94 F.4th at 93, EPA cannot require States to demonstrate that every deviation from EPA's preferences is based on a "fundamental difference[]" between what "EPA considered" and "the information specific to a facility." CI8244 (89

Fed. Reg. at 39,964). This Court has rejected similar attempts by EPA to "simply throw[] the burden of persuasion onto the states" and disapprove State plans when they do not meet it. *Michigan*, 213 F.3d at 683; *contra* 88 Fed. Reg. 80,480, 80,526 (Nov. 17, 2023) (asserting States may impose less stringent standards only if they show that EPA's baseline standards would be "unreasonable").

Cooperative federalism means EPA must allow States room for tailored regulations. It does not mean EPA can refuse States' choices if they do not track EPA's specifications precisely. Doing otherwise "run[s] roughshod over the procedural prerogatives that the Act has reserved to the states." *Bethlehem Steel Corp. v. Gorsuch*, 742 F.2d 1028, 1036 (7th Cir. 1984).

Similarly, EPA cannot require States to adopt EPA's preferred "factors and evaluation metrics" in exercising their discretion under Section 7411(d). CI8244 (89 Fed. Reg. at 39,962). The statute guarantees States the right to consider "other factors" in setting source-specific standards of performance. § 7411(d)(1). Congress chose not to enumerate the relevant factors, leaving States free to consider any factors they deem relevant in any reasonable fashion. For example, States might

incorporate state-specific concerns pertaining to compliance costs, environmental considerations, energy matters, and other factors that EPA considers at the national level during the BSER stage. Or they might exercise their discretion creatively in employing different ways to reduce the source's emissions; for instance, they might consider varying modes of operation; whether to apply rate or mass emission limits (or both); whether to incorporate a grid-reliability safety valve; whether to provide for reliability-focused "off ramps" to address extreme weather or similar events; and whether to allow reasonable compliance margins.

EPA cannot override that statutory discretion by mandating States consider factors using only the same evaluation metrics as EPA, thereby mandating EPA's preferred "regulatory techniques." *Nat'l Min. Ass'n v. EPA*, 59 F.3d 1351, 1363-64 (D.C. Cir. 1995). That would eliminate "equally effective" state regulatory approaches. *Id.* at 1364. EPA may voice a "preferred approach" for State plans, but it may not erase State discretion by insisting on it. *Train*, 421 U.S. at 69.

EPA also errs in thinking that Congress intended States to account for only "exceptional circumstances." CI8244 (89 Fed. Reg. at 39,890 n.674). This phrase cannot be found anywhere in Section 7411. Again,

the statute expressly protects the States' pollution-management role, § 7401(a)(3), and Congress said EPA "shall permit" their source-specific judgments, *see* § 7411(d). *See Lexecon Inc. v. Milberg Weiss Bershad Hynes & Lerach*, 523 U.S. 26, 35 (1998) ("shall" "normally creates an obligation impervious to judicial discretion"); Permit, *Black's Law Dictionary* (12th ed. 2024) (To "permit" something is "to allow [it] to happen" or "give opportunity for" it "to occur"). Requiring States to provide exceedingly persuasive reasons—and limiting the scope of those reasons to only those EPA has preselected—before allowing States to exercise discretion Congress has already said EPA *must* allow and did not restrict is wrong. The Rule turns "shall" into a virtual "shall *not*," at least absent non-statutory, ill-defined circumstances that EPA has decided satisfy its nebulous standard of being "exceptional." *See, e.g., Jimenez-Castro v. Sessions*, 750 F. App'x 406, 408 (6th Cir. 2018) (explaining, in the immigration context, that "[t]he exceptional-circumstances standard sets a high bar that will be met in only rare cases" (cleaned up)).

The Rule claims to treat "remaining useful life" as a potential way to mitigate the presumptive standards' rigidity. *E.g.* CI8244 (89 Fed. Reg.

at 39,962). Any mitigation is illusory. Again, EPA already considered, as a key factor, the remaining useful life of coal plants by establishing performance standards based on when coal plants will retire. This decision removes the States' congressionally provided discretion over this issue when applying the Rule, unless they can show a fundamental difference between their remaining-useful-life considerations and EPA's and EPA decides these differences are exceptional enough. *Contra* § 7411(d)(1). Nothing in Section 7411(d) suggests EPA may outflank States like this.

Rules that "overthrow" the Act's "structure and design" are unlawful. *Util. Air Regul. Grp.*, 573 U.S. at 321. This Rule's cavalier approach to Section 7411's text shows it's one of them.

C. The federalism canon cuts against EPA's interpretation of Section 7411(d).

The federalism canon confirms the Rule exceeds EPA's statutory authority. This tool of statutory interpretation reflects our Constitution's unique structure. States "are not relegated to the role of mere provinces or political corporations, but retain the dignity, though not the full authority, of sovereignty." *Alden v. Maine*, 527 U.S. 706, 715 (1999). So courts must act cautiously when interpreting federal statutes that may

impinge on State authority. "To preserve the proper balance between the States and the Federal Government and enforce limits on Congress's Commerce Clause power, courts must be certain of Congress's intent before finding that it legislated in areas traditionally regulated by the States." *West Virginia*, 597 U.S. at 744 (Gorsuch, J., concurring) (cleaned up). In this way, the canon gives effect to congressional intent. *See Bond v. United States*, 572 U.S. 844, 858 (2014).

The Rule intrudes on an area of traditional State regulation—"the regulation of utilities is one of the most important of the functions traditionally associated with the police power of the States." *Ark. Elec. Co-op. Corp. v. Ark. Pub. Serv. Comm'n*, 461 U.S. 375, 377 (1983). And the Rule's interpretation of Section 7411(d) expands this intrusion, allowing EPA to dictate standards in an area where Congress has said that States get discretion. Congress may grant that kind of authority only with "exceedingly clear language." *U.S. Forest Serv. v. Cowpasture River Pres. Ass'n*, 590 U.S. 604, 621-22 (2020). EPA has not identified such language here. That failure is fatal to the Rule's intrusion on the States' domain.

* * *

By imposing substantive limits on State discretion under Section 7411(d)(1), EPA not only violates the statute's clear text, but it also undermines the Act's statutory objective of cooperative federalism. The Rule cannot stand.

V. The Act does not authorize EPA to subcategorize by retirement.

EPA exceeded its statutory authority by subcategorizing coal-fired power plants based upon retirement date. *See* 5 U.S.C. § 706(2)(C). Two of the Rule's options—install 40% natural gas co-firing before 2030 and retire before 2039, or simply retire before 2032—render retirement date part of the standard of performance itself.[21] But while the Clean Air Act authorizes EPA to subcategorize sources for purposes of setting performance standards, *see* § 7411(b)(2), EPA's use of that authority here is unlawful for at least three reasons.

First, retirement is not a standard of performance—it is a standard of *non*-performance. *See Solid Waste Agency of N. Cook Cnty. v. U.S.*

[21] Although the Rule labels its shut-down-before-2032 option as an "applicability exemption," rather than a subcategory, *see* CI8244 (89 Fed. Reg. at 39,805), this option is in reality merely part of EPA's effort to subcategorize sources by planned retirement date. Any regulated power plant may avoid a regulation by not complying, regardless of whether EPA writes any so-called "exemption" for these entities.

Army Corps of Eng'rs, 531 U.S. 159, 171–72 (2001) (giving "effect" to Congress's use of the word "navigable" within the statutorily-defined phrase "navigable waters"). Section 7411 allows EPA either to set "standards of performance" for new sources or to "guide States" in setting such standards for existing sources. *See West Virginia*, 597 U.S. at 728 n.3; § 7411(b)(2), (d)(1). It does not "empower[ ]" EPA to "direct existing sources to effectively cease to exist," *West Virginia*, 597 U.S. at 728 n.3, thereby mandating non-performance.

Second, retirement-date subcategories are not categories based upon class, type, or size, which is all that Section 7411 permits. Section 7411(b)(2) provides that in developing standards of performance, "[t]he Administrator may distinguish among *classes*, *types*, and *sizes* within categories of new sources." (emphases added); *see* CI0695 (NMA Comments 14–17). These terms denote the current characteristics of an emissions source, such as the "physical, locational, and operational characteristics" affecting a plant's emissions. *See* CI0001 (88 Fed. Reg. at 33,271. A plant's retirement date—which is an economic decision made by the plant's owner—does not fall within those statutory terms, and so is not a basis for subcategorization under Section 7411.

Finally, subcategorizing by retirement date usurps the States' authority under Section 7411(d) to address an existing power plant's remaining useful life when setting standards of performance. Under Section 7411(d)(1), States have the authority to "take into consideration, among other factors, the remaining useful life of the existing source." It is thus the States—and not EPA—that have the authority to address a plant's retirement date in developing a standard of performance for each existing source. *Id.* In subcategorizing existing sources based upon planned retirement date, EPA seizes for itself the States' statutory authority to consider remaining useful life in setting standards, contrary to Section 7411(d)'s plain terms.

VI. The Rule violates the Act in other ways.

As should be clear to this point, the Court need not even leave Section 7411(a)(1) to declare this Rule unlawful. But several other problems lurk beyond that provision that likewise doom the Rule.

A. EPA cannot regulate coal plants under Section 7411(d), because it already regulates them under Section 7412.

EPA does not have the statutory authority to regulate existing coal plants under Section 7411(d) when it already regulates those plants under Section 7412. The Clean Air Act houses multiple programs

governing air pollution. *See* §§ 7408(a)(1), 7411(b), 7412(b). Section 7412 outlines one of the Act's "major" programs, which targets hazardous air pollutants. *West Virginia*, 597 U.S. at 707-08. The program lists a variety of hazardous air pollutants, § 7411(b), and commands that EPA "directly require all covered sources to reduce their emissions to a certain level," *West Virginia*, 597 U.S. at 708. In comparison, Section 7411(d)—which "authorizes regulation of certain pollutants from *existing* sources" and is housed in a larger regulatory scheme for setting performance standards for *new* sources—is more modest in scope. *Id.* at 709–10 (emphasis in original). Section 7411(d), in other words, is an "ancillary" provision of the Act, which "operates as a gap-filler." *Id.* at 710 (quotation marks omitted).

Given the different roles of these programs, and the potential for overlap, the Clean Air Act includes a protection against double regulation. Consistent with its view that Section 7411(d) performs a mere gap-filling role, Congress directed that EPA may only "prescribe regulations . . . for any air pollutant," under 7411(d), "which is not emitted from a *source category* which is regulated under" Section 7412. § 7411(d)(1) (emphasis added). That means, if EPA regulates an emission

source under Section 7412, it may not also regulate that source under Section 7411(d). *Accord Am. Elec. Power*, 564 U.S. at 424 n.7. Here, EPA undeniably regulates mercury emissions from coal plants under Section 7412. CI8244 (89 Fed. Reg. at 39827). Thus, it cannot also regulate coal plants under Section 7411(d).

An earlier, divided panel of this Court rejected this argument. *Am. Lung Ass'n*, 985 F.3d at 978–88; *but see id.* at 1003–13 (Walker, J., dissenting). The Supreme Court later overruled the panel's decision on different grounds. *West Virginia*, 597 U.S. at 735. The *American Lung* panel's unaddressed analysis remains binding on a later panel of this Court even though the panel's judgment was vacated on other grounds by the Supreme Court. *E.g.*, *Rosenkrantz v. Inter-American Dev. Bank*, 35 F.4th 854, 865 n.4 (D.C. Cir. 2022). Still, Petitioners have preserved this argument for any further review they may choose to seek.

B. EPA arbitrarily and capriciously failed to address comments about the unique factors related to coal refuse plants.

1. Coal refuse-fired plants provide environmental benefits.

A stated purpose for the Rule is to minimize greenhouse gases through regulation of coal-fired facilities. *See* CI8913 (Regulatory Impact

Analysis at ES-1); CI8244 (89 Fed. Reg. at 39,845-46). EPA has failed to recognize that coal-refuse-fired facilities, which use waste coal as fuel are part of the solution. Coal refuse facilities reduce greenhouse gas emissions and help remediate surface water, groundwater, and air pollution associated with coal refuse piles. CI0708 (ARIPPA Comments 2); *see also* CI0560 (SER Comments); CI0559 (Ri-Corp Comments).

Commenters alerted EPA that it should create a subcategory for coal refuse facilities to ensure continued CO_2 emissions reductions and other environmental benefits. For example, the Appalachian Region Independent Power Producers Association ("ARIPPA"), a member of Petitioner Midwest Ozone Group, stated that without coal-refuse-fired facilities, "legacy coal refuse piles would remain essentially abandoned to the environment and will frustrate regional air quality and climate change goals for multiple additional generations as the abandoned piles themselves continue to emit products of incomplete combustion, CO_2, and the potent greenhouse gas methane." CI0708 (ARIPPA Comments 10). Further, coal refuse-fired facilities help reduce CO_2 emissions by millions of tons each year. For example, in 2020 the 11 coal refuse-fired facilities produced 7.6 million tons of CO_2 from coal refuse combustion, but that

same refuse would have emitted 29 million tons if left on-site without combustion. CI0708 (*Id.* at 13). Management of coal refuse as a fuel therefore significantly reduces greenhouse gas emissions.

EPA ignored these comments and, as a result, the Rule makes no sense on any level for coal refuse facilities. EPA's failure to acknowledge any of these realities about these facilities is arbitrary and capricious.

2. EPA has failed to properly characterize coal refuse facilities as it sought to determine BSER.

Section 7411(b)(2) provides authority for EPA to distinguish among classes, types, and sizes within categories of new sources to establish standards of performance for emissions. In the Proposed Rule, EPA interpreted Section 7411(d) as also allowing it to place types of existing sources into subcategories based on characteristics that are relevant to the controls creating the basis of BSER determinations. CI8244 (89 Fed. Reg. at 33,345). Despite comments urging EPA to create a subcategory for coal refuse facilities, EPA failed to even discuss that option.

EPA's performance standards are even less achievable at coal refuse facilities. The Rule's CCS requirements have not been adequately demonstrated at any coal-fired facility (including coal-refuse-fired plants). *Supra* Section I.A. Coal refuse facilities also cannot co-fire

substantial amounts of natural gas for the same reasons other coal-fired facilities cannot. *Supra* Section II.B. Moreover, regulations under the Public Utility Regulatory Policies Act, 16 U.S.C. § 2601, et seq., impose specific requirements on facilities that burn waste coal as a primary fuel. 18 C.F.R. § 292.204. Among other things, 75% of the heat input to the boiler must come from waste coal, while fuels like natural gas may be used only for starting up and shutting down. *Id.* Thus, it is not possible to co-fire 40% natural gas and still use 75% coal refuse, meaning it is impossible to comply with both the Rule and the Public Utility Regulatory Policies Act. That puts coal-refuse plants in a bind and could result in significant reduction, or even elimination, of the positive environmental impacts of the industry. CI0708 (ARIPPA Comments 19).

EPA also ignored the feasibility issues with co-firing natural gas with coal refuse. *See* CI0560 (SER Comments 6); CI0559 (Ri-Corp Comments 5-6). EPA claims"[m]ost existing coal-fired steam generating units can be modified to co-fire natural gas in any desired proportion with coal, up to 100 percent natural gas." CI8244 (89 Fed. Reg. at 39,892). But EPA failed to consider that coal-refuse facilities operate differently than ordinary coal-fired facilities. Coal refuse units have a much lower

combustion temperature than traditional coal-fired units (840-900°C degrees versus 1,350-1,500°C). And because coal refuse boilers are designed to operate with ash in the boiler, these facilities do not operate efficiently with natural gas. CI0708 (ARIPPA Comments 16). Further, these facilities generally have a much smaller operating capacity than a traditional coal-fired units. *Id*. The small physical size of these facilities restricts the ability to retrofit additional unproven controls and presents difficulties in installation given the layout and the needs of the systems to interface with existing equipment. *Id*. Unsurprisingly, natural gas co-firing has never been demonstrated on any coal refuse facility.

Finally, EPA's subcategorization process failed to reasonably assess the monumental economic challenge faced by coal-refuse-fired sources that will be required to achieve compliance with the Rule. EPA cites the tax credits discussed above as ameliorating cost concerns. CI8244 (89 Fed. Reg. at 39,800). But even apart from all the problems of that cost analysis, *see supra* Section I.B., these incentives come nowhere close to remedying the financial harms of the Rule. This is in part because the ability of coal-refuse-fired sources to amortize and recover the capital

costs of unique engineering and equipment is limited. CI0708 (ARIPPA Comments 18-19).

In short, despite commenters providing robust comments to EPA detailing the greenhouse gas benefits of coal-refuse-fired power generation and the impracticability of applying EPA's BSER determinations to coal refuse facilities, EPA unlawfully offered no response to those comments. Commenters demonstrated the need to create a separate subcategory as provided for in Section 7411(b)(2) for coal refuse facilities to recognize, among other things, their environmental benefits, net-neutral greenhouse gas emissions, and unique boiler characteristics. EPA failed to even acknowledge these comments. These facts alone demonstrate the unlawful, arbitrary, and capricious nature of this Rule and therefore further support vacatur of the Rule.

CONCLUSION

The Court should vacate the Rule.

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Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

This brief complies with the type-volume limit of the Court's order of August 9, 2024, ECF No. 2069206, because, excluding the parts of the document exempted by Fed. R. App. P. 32(f) and Circuit Rule 32(e)(1), this brief contains 31,480 words, which is within the 32,000-word allotment provided by the Court to Petitioners for their opening brief.

This brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type-style requirements of Fed. R. App. P. 32(a)(6) because this brief has been prepared in a proportionally spaced typeface using Microsoft Word in 14-point Century Schoolbook font.

Dated: September 6, 2024

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